

DOKTORI (PhD) ÉRTEKEZÉS

**STUDIES IN THE DEVELOPMENT OF TRANSLATION
COMPETENCE**

LESZNYÁK MÁRTA

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Alkalmazott Nyelvészeti Program**

2008

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ACKNOWLEDGEMENTS

The writing of a dissertation is obviously not possible without the personal and practical support of several people. The completion of my dissertation has been an exceptionally long journey, thus I owe special thanks to those who had faith in me and supported me all these years both personally and professionally.

First and foremost, my sincere gratitude goes to my husband and my children for their love and patience. They gave me reason to finish this dissertation.

I would like to give special thanks to my sister and several other friends who were always there for long professional discussions and never spared encouragement or advice when I was in need.

Accomplishing research would not have been possible without the professional help of numerous people.

I am indebted to *Professor Csapó Benő* and *Professor Nikolov Marianne* who offered the opportunity to use the sample of the Foreign Language Survey and without whom the large-scale survey of translation competence would not have been possible.

I wish to thank *Novák György*, *Matuska Ágnes*, *Demeter Éva* and *Molnár Péterné* who helped to find volunteers for the think-aloud study; and *Bogárné Németh Mária* for organizing the quantitative survey.

I extend my thanks to *Zsembery Eszter* and *Bakti Mária* for providing assistance and expertise in devising the problem test for positive evaluation; and *Bukta Katalin*, *Molnár Edit Katalin*, *Zámbó Ildikó*, *Vásáry Balázs*, *Matuska Ágnes*, *Lesznyák Ágnes* and *Kovács Bertalan* for evaluating the translations of the large-scale survey and the process-oriented study.

I am especially grateful to students and professionals who honoured me by offering their valuable time and energy for the process-oriented study. Their participation and cooperation was vital for this dissertation.

I owe special thanks to *Józsa Krisztián* who taught me the tricks of the trade in applying statistical analysis in the social sciences. He also provided valuable comments on Part 3 (the quantitative survey), and I did my best to improve the chapter in line with his recommendations.

Finally I am greatly indebted to *Professor Cs. Czachesz Erzsébet* for assisting me over these long years. Her professional support and personal encouragement and trust helped me through critical times. She gave evidence of her extraordinary patience not only by supporting me in the unusually long process of finding an appropriate research topic but by reading the drafts of this lengthy dissertation chapter by chapter and giving useful comments on them. Any errors or omissions that remained in this piece of work are solely my responsibility.

1. INTRODUCTION

The present dissertation focuses on *translation competence* and its *development*. In the last decades of the past century institutionalized forms of translator training became widespread in most developed countries, which resulted in a growing interest in the phenomena related to translation teaching. As translation competence is one of the central concepts of translation didactics, it is no wonder that in the 1980s and '90s we could witness a minor explosion in translation competence research. Nevertheless, the concept of translation competence is still far from being well-formed, in fact, as a recent article by Pym (2002) reflects, there seems to be little agreement on what translation competence actually is. In addition, although theorization has already begun, there are only very few empirical studies on translation competence, and even fewer on its development. The lack of research is even more apparent in Hungary, where only Dróth Júlia has conducted an investigation in this field (see Dróth, 2001a, 2001b). Meanwhile, mediation and translation are gaining on importance in a “globalized” world, thus, there is a growing need to know more about related phenomena. In the present study we will summarise what we know of translation competence and its development and we will try to extend this knowledge with the results of our empirical research. We used both quantitative and qualitative methods to gather information on the development of translation competence. The specific aims of the dissertation are described in the following section.

Aims of the dissertation

The specific aims of the dissertation were manifold. First, there was a need to obtain *a clear view* of what we know *of translation competence* to date. As translation competence is a novel research theme, there are no systematic overviews on models. A summary of the different ideas, implications and approaches adds not only to our understanding of the concept but it is also indispensable as a background and basis for any research.

A further aim was to *gather information on the existence, on the composition and on the development of natural translation competence*. Product-oriented, quantitative research has been carried out with language learners to clarify these issues. Such an investigation, however, needs tested and verified evaluation methods, which we painfully lack in translation studies. Thus, a further aim, that of *working out and testing some methods for translation assessment* emerged.

No matter how valuable large-scale investigations are from the point of view of the generalizability of results, they do not lend themselves to the examination of certain problems. Translation processes are typical examples of such problems. To *gain insight into laymen's and professionals' translation processes* WE conducted qualitative, process-oriented research, too. We were interested in how these processes change as a function of experience and expertise. Together with ‘Thinking-Aloud’ (TA) which is the common and accepted data collection technique in similar studies, we applied Pair Translation (PT)¹ to gather information on translation processes. The reason for this was methodological: We wanted to *compare and contrast TA and PT as data collection methods*.

Structure of the dissertation

Part 2 describes the *theoretical background* of the study and the previous research in the field. In Chapter 1 we will explore the different uses of the word “translation” and pinpoint our translation concept. The next chapter gives a brief account of translation theories in general and elaborates more on functionalist theories, which form the theoretical basis of the

¹ sometimes referred to as joint or peer translation too. (House, 1988, Matrat, 1992; Jääskeläinen, 2000)

present research. Chapter 3 is a state-of-the-art review on the concept of translation competence. In his essay of 2002 Anthony Pym admits that the term ‘competence’ in translation studies is merely ‘kicked around the park’. It is used in an arbitrary way often without defining (but definitely implying) what is really meant by it. In this chapter we make an effort to give a systematic overview of translation competence concepts from the point of view of educational psychology. In Chapter 4 and 5 we discuss previous research on translation assessment and on translation processes. On the basis of these accounts

1. research questions can be formulated: what are the issues previous research has not touched upon or could not solve;
2. Methods of data collection, coding and analyzing can be identified, selected and modified for the present investigation.

Chapter 6 in Part 1 describes the theoretical framework of the study.

In *Part 3* the research design and the results of the *quantitative investigation* are presented. After describing the pilot study, translation evaluation methods are analyzed and assessed. Then, we compare the translation performance of two age-groups (grade-7 and grade-11-students) and we examine whether we can talk about the development of translation competence. We will also explore how some foreign language skills (e.g. reading and writing) relate to translation performance. Some background factors (e.g. attitudes, task-perception, parents’ educational qualifications, gender etc.) and their correlation with translation performance will be analysed, too. Finally, results of a series of regression analyses are presented to shed light on cause-and-effect relationships between background factors and translation performance.

In *Part 4* we discuss the results of the *qualitative investigation*. Data collection resulted in an enormous amount of material which could have been (and still could be) analysed from several different aspects. In accordance with the overall philosophy of the dissertation, primarily easily quantifiable aspects of the translation process are involved in the analysis. Thus, the quality of the produced translations, temporal aspects of the translation process, the act of reading the source text and the translation brief, the number of run-throughs and the use of reference materials are examined. On the one hand, TA and PT are compared on these dimensions. On the other hand, the four subgroups (secondary school language learners, English majors, translation students, professional translators) will be compared along the dimensions presented above.

The concluding *Part 5* focuses on summing up the findings and delineating further research needs.

Summary

The findings of the research have direct relevance to translator training as they shed light on the development of translation competence and the formation of expertise. In addition, results can be useful for foreign language teachers, too, as connections between language skills, translation performance and some background factors are revealed by the data. Our research results may provide help for those interested and involved in developing rudimentary mediation and translation competence in non-professionals.

The results of the investigation are unique from several aspects. When we reviewed the literature on translation evaluation, we could not find any large-scale surveys that would have examined language learners’ (or for that matter, professionals’) translation performance and its relation to language skills and other factors. Similarly, no process-oriented research design included subjects with so distinct experiences, and we could not find any systematic comparison between TA and PT, although some attempts were made to find each method’s advantage.

Doing pioneering work, however, has its drawbacks too. The research has not only produced valuable results, but it has confronted us with unexpected problems as well. Most of these problems could not be solved within the framework of the present study; therefore, they call for further research.

A special difficulty lies in the interdisciplinary nature of translation studies, which dooms the researcher to produce a work that is far from perfect in its details. Experts in translation theory may lack a deeper analysis of their field, but in the same vein, cognitive psychologists can criticize the fuzzy nature of the concept of translation competence and psychometrists could complain about the low number of subjects in the qualitative study and of the unrepresentativeness of the sample in the quantitative study. Nevertheless, we believe that in spite of all of its limitations, the dissertation provides insights and evidence into issues that we know hardly anything of (particularly in Hungary).

Abbreviations

Conforming to tradition in translation studies and psycholinguistics, several common concepts were used in their abbreviated forms throughout the dissertation. These are the following:

SL = source language
ST = source text
SC = source language culture
TL = target language
TT = target text
TC = target language culture
TA = thinking aloud
TAP = think aloud protocol
PT = pair translation
STM = short-term memory
LTM = long-term memory

2. THEORETICAL BACKGROUND

2.1 What is translation?

The first theoretical problem we have to face is the definition of translation. Similarly to other concepts, the term ‘translation’ has several definitions. Strangely enough, however, translation is seldom defined in applied research, which often leads to confusion and misunderstandings (Heltai, 1996, 1997). In this section we will make an attempt to classify notions of translation, draw distinctions between different forms of translation and then pinpoint the definition we accept in our research.

Reviewing several studies in translation, we found that some translation concepts originate in translation theories, while some others emerge from implicit assumptions of researchers. The following classification is only an attempt to create some order in chaos, and by creating order, assist the present research. We are aware that the classification is eclectic in that a variety of viewpoints were used to set up categories and, as a result, categories often overlap. We also admit that there may be several other possible ways of categorizing translation concepts. However, the present one serves our purposes best.

The translation concepts can be grouped as follows:

1) “Translation is a profession”

Translation is what professional translators do; or: translation is an expert activity. This view of translation stems from functionalist theories (Holz-Mänttari, 1984; Nord, 1997b) and has become very popular recently (see e.g. Toury, 1995; Risku, 1998 or Pym, 1996). This approach clearly distinguishes between professional and non-professional translation, and tends to render the status of translation proper only to the former one. The advantages of such a view are manifold: they highlight the difference between experts and amateurs in several areas (linguistic and cognitive processing, attitudes, handling clients etc.) and they contribute to the recognition of translation as a profession. It also gave rise to studies on professional behaviour and techniques. However, it has certain disadvantages as well. For some reason, there is a tendency to mistake qualification for expertise and to presume that all qualified translators apply professional strategies. Unfortunately, a university degree or several years of job experience do not guarantee either of the above. The confusion however, may have an adverse effect on research results. Furthermore, the definition is fairly narrow, in a sense that it excludes language learners, bilinguals and other laypersons from the scope of translation studies. Although it is reasonable to assume that there are fundamental differences between experts’ and bilinguals’ translation (both in terms of process and product), non-professionals’ exclusion from ‘translation’ and the neglect of research in this direction have serious consequences: on the one hand, we are left without a term for what amateurs do when they translate; and on the other hand, we do not know much about how a laypersons’ translation competence turns into expertise.

2) “Translation is a linguistic act or a linguistic relation.”

Definitions and studies belonging to this group concentrate on the linguistic nature of translation. The translator him/herself has a secondary role, if he/she is taken into account at all. The main focus of research in this category is how one language can be mapped onto the other in general, or in particular. Linguistic theories of translation (see *Section 2.2.1 Linguistic approaches*) and investigations on linguistic phenomena in translation belong to this group.

3) “Translation is a communicative activity”

Several authors would agree that real translation is a communicative activity, that is, it is the act of mediation between two languages and two cultures. This position has its origins in

functionalist theories, too. Those who adopt this view of translation often guarantee it the status of language competence, too (Nord, 1999; Bárdos, 2000). Translation as communication is not bound to the person carrying out the task: both professionals and non-professionals can do it - it depends on the situation and the purpose of translation in the situation whether translation can be classified as communicative or not. This means that language learners may find themselves in a situation where they have to mediate no matter how well developed their language skills are. Certainly, professionals and non-professionals behave differently in communicative situation, or at least, that is what we suppose.

4) “Translation is a language teaching technique”

As many scholars argue (see the edited volumes of Titford and Hieke, 1985; and Malmkjaer, 1998), translation does not always fulfil real communicative functions. In foreign language teaching it is often used as a technique to ensure comprehension, to make the structure of a second language transparent, to practise certain structures or to test certain linguistic elements. This type of translation is often referred to as school translation, scholastic translation or pedagogical translation, and is a rather controversial issue in itself (Heltai, 1996, Malmkjaer, 1998).

School translation is sometimes linked with the person of language learner, which can be quite misleading as the definition itself is based on the *function* of translation. Nevertheless, the distinction between communicative and school translation is itself a problematic one because it is likely to obscure similarities between the two activities (Heltai, 1996)

5) “Translation is a language learning/cognitive strategy”

Though much less often, but translation is sometimes conceptualised as a cognitive strategy language learners use to compensate for their shortcomings in language competence (Nikolov, 2003; Oxford, 1990; O’Malley et al, 1985; Bartelt, 1997; Liao, 2006). There is some evidence that automatized production in the second language is preceded by a stage when the language learner acts as his/her own simultaneous interpreter. This kind of translation is clearly different from both communicative translation, where the translator has an intermediate position in the communicative process and from school translation, where the translation activity has no direct communicative functions.

6) “Translation is a cognitive/neural process”

Last, but not least, translation is seen as a mere neural activity by many scientists. With the development of neural imaging techniques paralleled by the interest of cognitive science in languages there is a renewed enthusiasm both among cognitive psychologists and neuroscientists to map and analyze the brain from the point of view of language use (for neuroimaging studies see e.g. Price et al, 1999; Hernandez et al, 2000; De Bleser et al., 2003; Lehtonen et al., 2005; for studies with cognitive psychological orientation see e.g. Duyck, 2005; Macizo and Bajo, 2006; Christoffels et al., 2006). Bilingualism and translation often serve as objects of these studies. In neurological research, translation is seen nothing more than transforming an L1 sign into another (L2) sign. Units of translation, direction of translation or level of competence and amount of experience of the translator are usually not paid attention to – a fact that gave rise to criticism from several authors (e.g. Fabbro, 2001; Paradis, 2004).

In our study we will adopt the view of translation as a *communicative activity*. Pure linguistic, neural and language learning aspects are clearly not relevant for the purpose of the study – that is, for the investigation of the development of translation competence. “Translation as a

professional activity” was regarded too narrow for the scope of our study: the developmental aspects could not have been examined if we had excluded non-professionals from the study.

Before turning to translation theories, some further distinctions must be made. The first one concerns the *direction of translation*. Most professional translators work from their 2nd or 3rd etc. language (or B and C languages) to their first language. However, in case of small languages (and Hungarian is definitely one of them), translators are often required to translate from their mother tongue to their 2nd or 3rd languages. Naïve translators are likely to meet both situations. In the present study, only L2→L1 translation will be examined for the following reasons:

- L2→L1 translation is more significant for translator training, as a result, the findings of our research are more likely to be taken up by the translator community.
- Previous research results (Krings, 1986a, b; Lörcher, 1991b; Campbell, 1991) suggest that L1→L2 translation is much more dependent on the subjects’ L2 competence than L2→L1 translation. Focusing on L2→L1 translation helps us avoid confusing translation competence and L2 competence.

The same authors propose that L1→L2 translation develops more slowly and probably takes a different developmental path. It follows that L1→L2 is a different research issue of its own right and must be investigated in an independent project. It is also clear that results of the present study (L2→L1) cannot be generalized to translation per se.

A further distinction can be made between *oral* and *written* translation. Laypersons (even language learners and scholars in other fields – see e.g. neurolinguistic studies!) tend to blur the distinction between the two, professionals, however, are usually painfully aware of it. Most professionals either work in speech (interpreters) or in writing (translators) but we must note that there are cross-forms as well: e.g. from writing to speech or vice versa. This paper focuses on written translation, which is mainly justified by methodological reasons: both simultaneous and consecutive interpretation are extremely difficult to study. Although there are initiatives to investigate it with retrospective methods (see e.g. Ivanova, 2000), the validity of such studies is questionable (Ericsson and Simon, 1999). Furthermore, non-professionals are even less likely to have experience in interpreting than in translating. The construct of “interpretation competence” is largely non-existent, so the study would have floated in a theoretical void. Last, but not least, large-scale investigation of interpretation (see quantitative survey) is unfeasible.

In the next section some translation theories will be explored in more detail in order to offer a theoretical background for the study.

2.2 A brief overview of relevant translation theories

Translation theory forms a large, independent and prestigious research field within translation studies. Consequently, it is rather difficult, if not impossible to present the ideas of theorists in their completeness. Neither does this belong to the scope of our dissertation. However, we cannot simply ignore theories and turn immediately to practice for the simple reason that practice and research always rely on some theory whether it is made explicit or not. From the researcher's perspective, answers to questions like what actually translation is, what the relationship of the ST and the TT should be or what the translator is supposed to do bear serious consequences on the research design, that is on research questions, on methods and on the interpretation of findings. Ignoring the literature on translation theories may cause severe problems of validity like in Stansfield et al's study (1992). Stansfield and his colleagues failed to construct any theoretical framework for their investigations; as a result, many of their test items reflect a folkloristic approach to translation where finding 'the closest natural equivalent' embodies translation ability².

To avoid such pitfalls we will make an attempt to give a brief overview of the theories that are directly related to our research. Then a theoretical framework for the present study will be outlined.

Translation theories can be categorized in several ways. According to Nida (1991), there are philological, linguistic, communicative and sociosemiotic perspectives on translation. Stolze (1994) differentiates between linguistic-oriented, text-linguistic-oriented, action-oriented and psycholinguistically-oriented theories and research.

In a completely different vein, Klaudy (1999) reviews how ideas of socio-linguistics, psycholinguistics and text-linguistics and how concepts like translation process models and equivalence appear in translation theory.

Yet another stance is taken by Mary Snell-Hornby (1988) who distinguishes only between "two main schools of translation theory which now dominate the scene in Europe" (Snell-Hornby, 1988, 14). One of them is the linguistic approach and the other one became known as the functionalist approach.

As each categorization is valid and has its own advantages and disadvantages, it is usually the focus of the actual research that determines which classification is accepted as a theoretical background. As this paper is not theoretically oriented, and consequently, no particularly sophisticated distinctions are needed, Snell-Hornby's distinction will be adopted. The rough differentiation between linguistic and functionalist approaches provides a simple and clear framework for our empirical research.

2.2.1 Linguistic approaches

Linguistic theories have a longer tradition than functionalist theories, but they are less popular recently. In addition, Fawcett (1997) argues that the relationship between linguistics and translation theory has always been marked by scepticism. Nevertheless, as we regard translation as an activity deeply embedded in language (see *Section 2.3* on translation competence) linguistic theories form a fundamental pillar of our research.

The category 'linguistic approaches' comprises a wide range of theories that sometimes show marked differences in their views on the nature of both language and translation. Nonetheless, these theories share certain features, the most important of which is their *focus on the*

² Translation ability is Stansfield et al's term for what normally is labelled as translation competence in the literature.

linguistic system. Snell-Hornby (1988) further characterizes these theories as being preoccupied with *equivalence*. Moreover, though issues like the relationship of language and reality or that of two language systems are discussed in detail in these theories, language and translation are always viewed *in isolation from communicative context and function*. Neither are psychic processes of translation contemplated on or accounted for by these theories.

Linguistically oriented translation scholars usually agree that translation can be conceptualised as a *rule-governed process*, in which SL strings can be transformed into TL strings. As a result, such theories are typically concerned with *finding generally applicable transfer rules* (although various terms may be used for this concept) and they tend to neglect context variables to a large extent. *Contrastive linguistics* plays a major role in finding rules and terms like *equivalence, transfer, transformation, transposition, shift, rules* etc. are important keywords of this approach. The unit of translation is typically small in these theories, usually no longer than the sentence, but more often than not, words or expressions. However, text-linguistic theories form an exception here.

Although translation theory can be traced back as far as Cicero, and, although the following centuries are marked by sporadic expositions on translation (Stolze, 1994, Venuti, 2004), the systematic study of translation began only in the 20th century.

Both Stolze (1994) and Fawcett (1997) propose that the first modern linguistic theory that has direct relevance to translation theory is *Saussure's theory of the sign*. According to Saussure and the structuralist school of linguistics, language as a system of signs is logical, and it can be observed and described objectively. Different languages may form different systems but with the help of logical rules we can transform one sign system into another. What makes this transformation possible is the assumption that we live in the same world. Both the system of notions and the logical system of the relations between these notions originate from this common world, thus, all human beings understand them. Such an approach to languages and reality supports the idea of successful translation as one system of signs can always be transformed into another system of signs by means of some logical operations.

Perhaps the most influential linguistic theory of the 20th century was *Chomsky's generative grammar*, which had a strong impact on translation theory, particularly on machine translation, too. Chomsky and his students assume that languages in their observable form show only their surface structures, which vary from language to language. However, these surface structures are derived from deep structures which reflect the structure of human thinking (Stolze, 1994) and as such, are thought to be universal. The existence of a universal grammar and of transformational rules governing the organisation of signs into deep and surface structures was hypothesised. Though the original theory concentrated on syntax, it was later extended to semantics.

Paradoxically, Chomsky's ideas exerted enormous influence on translation theory, although in his seminal work "Syntactic Structures" (1957, in Hungarian: 1995), he opposed to the view that his method had any relations to translation. Nevertheless, the logical consequence of his theory is the assumption that exact translation can be produced: everything can be expressed in every language; we only have to find the appropriate form with the help of the appropriate rules. This can be reached as follows: The surface structure of L₁ is transformed into deep structure in L₁. Deep structure represents a "thought" and as such, it is supposed to take on the form L₂ deep structure automatically, and then, it would be transformed into L₂ surface structure. Stolze (1994) considers Mounin (1963), Koschmieder (1965), Koller (1979) and Wilss (1977) as theoreticians most closely connected to generative grammar.

Chomskyan views inspired researchers to form further theories of translation some of which we are going to portray here briefly.

Stolze (1994) identifies an approach which is marked by the presence of German theorists (Kade, Neubert, Jäger, and Wilss) who define translation as ‘interlingual transfer’. This approach conceives languages as closed and self-contained systems and it aims at finding general rules (algorithms) for transforming *L1 meaning into L2 meaning*. The emergence and spread of terms like equivalence or the unit of translation are accredited to these theories. However, theorists never attempted to apply their algorithms to real texts and languages; as a result, they could not exert major influence on translation practice. Nevertheless, as Rydning (2005) notes, a renewed interest in *deverbalization* processes and *sense construction* can be observed with the advent of cognitive linguistics.

‘Language-pair oriented’ approaches form another distinctive group within linguistic theories. Proponents of these theories try to define rules of transfer too, but they concentrate on language pairs, i.e. they *try to find the specific rules that govern transfer from a particular L₁ to a particular L₂*. Perhaps the best known work within this category is Vinay and Darbelnet’s (1958) *Stylistique comparée*, which became not only the footing of a theoretical approach but that had a strong impact on translation didactics too. Vinay and Darbelnet outlined a translation method, and described the *transfer procedures* that are necessary when translating from French into English. They defined seven categories of translation procedures (borrowing, calque, literal translation, transposition, modulation, equivalence, adaptation) and established categories like obligatory and optional transpositions in translation (Vinay and Darbelnet, 2004)

Two further scholars, Peter Newmark and John Catford are usually considered to be clearly linguistically oriented.

Newmark can be characterized by a practical orientation and a learning-by-doing approach. He made an attempt to define translation rules for practice and labelled them “translation procedures”. Newmark’s (1988) translation procedures are very similar to Vinay and Darbelnet’s ones, but Newmark seeks to offer *ways of solving translation problems* to translators whereas Vinay and Darbelnet’s categories originated from an *interlingual analysis*.

In his linguistic theory, John Catford (1965) concentrates primarily on finding translation equivalents. He introduces the concepts of translation types and translation shifts. Translation shifts are exact rules describing how structures of a SL can be transformed into TL structures. Catford assumes that these rules are completely independent of context – an idea rather characteristic of linguistic approaches.

2.2.1.1 Text oriented translation theories

Text orientation in translation theory became popular in the 1980s (Klaudy, 1999) though the first classic works in this direction (e.g. Nida, 1964 or Reiss, 1971) appeared earlier (Stolze, 1994). The rise and success of text-oriented theories can partly be seen as a counter reaction to early linguistic theories that concentrated largely on words and sentences. In addition, the rapid development of text linguistics in the 1970s contributed to the development of text-oriented theories in translation, too.

As the term itself suggests, text-oriented approaches concentrate on the *text* when trying to explain phenomena related to translation. We must note, however that ‘the text’ often appears in other theories too, but in those theories it does not take such a central position as in text-oriented approaches. The ‘discovery’ of the text can be seen as a milestone in the history of translation theory. These were the first approaches that broke the hegemony of lexicon and syntax and directed attention toward larger linguistic and communicative units. Several recent theories regard the text as the primary unit of translation too, though these theories usually focus on a much broader communicative, social and cultural domain surrounding the text.

Text-oriented translation theories form a rather heterogeneous category: some approaches can be associated with linguistic theories (e.g. the works of Koller), and we can conceive them as the extension of linguistic approaches, while others are closely related to functional theories (e.g. the works of Reiss).

In the following paragraphs we will describe the most influential theories in some detail and give a brief account of other approaches in text-oriented translation research.

Eugene *Nida*, who is one of the most influential translation scholars of the 20th century, is often regarded as a representative of linguistic theories, though he obviously gave incentive to functional theories, too. Nida (1964) himself calls his approach ‘socio-linguistic’, and Fawcett (1997) characterizes him with the same term. However Stolze (1994) classifies Nida as the first forerunner of text-linguistic theories. In a similar vein, Klaudy (1999) mentions Nida and Taber’s (1969) work as among the first ones recognizing text-linguistic problems in translation.

Apart from raising translation to the status of an accepted field of research (though, finally, the translator community did not accept his term ‘science’ for the field), Nida’s most well-known contribution to translation studies is probably his distinction between formal and dynamic equivalence:

„*Formal* equivalence focuses attention on the message itself, in both form and content. [...] Viewed from this formal orientation, one is concerned that the *message* in the receptor language *should match as closely as possible the different elements in the source language*. This means, for example, that the message in the receptor culture is constantly compared with the message in the source culture to determine standards of accuracy and correctness.” (Nida, 2004, 156)

“In contrast, a translation which attempts to produce a *dynamic* rather than formal equivalence is based upon “the *principle of equivalent effect*” (Rieu and Phillips, 1954). In such a translation one is not so concerned with matching the receptor-language message with the source-language message [...] A translation of dynamic equivalence aims at *complete naturalness of expression* [...] (Nida, 2004, 156) (highlighting is from the author)

In addition, Nida and Taber (1969) offered a methodology for translation. It was a three-stage model, in which SL surface elements are analysed as linguistic (near) kernel structures. These are then transferred to the TL and are re-structured to TT surface sentences. Resemblance of this strategy to the one offered generative grammar is obvious. It is primarily because of this method that Nida is usually considered to belong to the linguistic orientation (Nord, 1997b). Nevertheless, he was the first to draw attention to cultural and textual factors in translation.

Another typical representative of the text-linguistic approach is Werner *Koller*. Koller’s (1979) main argument is that the source text and the target text must be equivalent on the text-level. He introduces the term “normative requirements of equivalence”, and he suggests that we can only call a rendering of a ST into a TT a translation if it fulfils these requirements. There are five types of normative requirements that contribute to text-level equivalence:

denotative, connotative, text-normative, pragmatic and formal-aesthetic equivalence. Stolze (1994) points out that Koller, with his rigid concept of equivalence is much closer to the philosophy of the *Stylistique Comparée* than to other text-linguistic approaches.

In her review, Klaudy (1999) identified two distinct trends within text-oriented translation theories. One of them focuses on the internal structure of texts, while the other one concentrates primarily on defining text types and finding the appropriate translation method for each text-type. These two approaches largely correspond to Fawcett's (1997) structural and functional orientations.

Structural approaches discuss the importance and the management of elements that ensure coherence (conceptual connection) and cohesion (grammatical and lexical connection). Furthermore, the information structure of sentences (theme/rheme or topic/comment organization) is also studied within this framework. Klaudy (1999) primarily refers to Russian theorists working in this field (e.g. Zarubina, 1981 and Csernyahovszkaja, 1976).

Functional orientations are closely related to text-typology, which is an essential but neuralgic issue in translations studies, as a result, the next section will be devoted to it entirely.

2.2.1.2. A short excursion to text-typology

Text typology, more exactly, the lack of an agreed-on text typology, presents itself as a practical problem for both translators and translator trainers. Different text-types require different translation strategies (see Reiss, 1971, 2000 below) – this assumption must be taken into account by translators doing their everyday jobs and by professors selecting texts for teaching and for evaluation purposes. As already suggested, however, the issue is far from being resolved yet. In this section, linguistic questions concerning text typology will be summarized and some implications for translation studies will be discussed.

It is common sense, and acknowledged by text linguists, as well, that texts *are* different and that there are texts that are more similar to each other than other texts. This recognition has led to categorization efforts since Aristotle. The problem is that although there are several classifications, none of them really gained ground as an accepted foundation on which teaching and evaluation could be based. Moreover, recent text linguistic trends tend to be anti-taxonomist as “texts are [too] unstable” (Swales, 1990) to be categorized. Such views when applied in translation studies may contribute to the development of translation competence because they advocate a deeper analysis of the ST as opposed to premature inclusion into simplified categories. However, they offer no help for evaluators who try to select texts for assessment purposes.

The same way we realize that texts are different we also perceive the varying degree of difficulty they represent. We can also go on and speculate that different (types of) texts need different skills, abilities and strategies to be processed. But with the reluctance of text linguistics to offer typologies we are left without an appropriate theoretical basis for text selection.

In spite of text linguistics' anti-taxonomism, text typologies do exist. The problem is that they are only seldom referred to in translation didactics or even more so, in competence assessment. Here WE would like to present Trosborg's (1997) perspectives on text-typology as they represent the most comprehensive review on the topic in translation theory. Trosborg proposes that the following concepts of text linguistics are of prime importance for translation studies:

- 1) *register* (i.e. use-related language varieties)
- 2) *Genre*, which are text categories defined by communicative purpose:
“texts used in a particular situation for a particular purpose” (Trosborg, 1997, 6).

It is important to note here that external criteria like form are not central features in the definition accepted by Trosborg.

The relationship between register and genre can be characterized as follows:

”Registers are divided into genres.” (Trosborg, 1997, 6)

Both registers and genres are open categories.

Registers impose constraints at the linguistic level (vocabulary, syntax), whereas genres operate on the discourse level (discourse structure).

- 3) *Text-type*: Relying on Aristotle, Bühler etc. the most widespread categorization of texts is based on the primary focus of the text. If it is the *sender*, the discourse will be expressive. If it is the *receiver*, we will talk about a persuasive discourse. If the focus is on the *linguistic code*, the text will be classified as literary and if we focus on the realities of the world, we will get referential texts (Kinneavy, 1971 cited by Trosborg, 1997)

However, going back to Aristotle, there is another possibility of classifying texts, that is, according to their *communicative function*. Texts, then, can be descriptive, narrative, expository, argumentative etc.

Text-type theories represent a different approach to texts than genres or registers. As Trosborg expresses it, “they cut across genres and registers”. This means that different genres may belong to the same text-type and the same genre may be realized by different text-types.

In relation to text-typology, the work of *Katharina Reiss* must be mentioned. Similarly to Kinneavy, Reiss (1971, 2000) took up the distinctions made by Bühler (1934) and modified his categories for the purposes of translation studies as follows:

- a. *informative texts*: conveying information (more or less Kinneavy’s referential category)
- b. *expressive texts*: organizing information in an artistic way (approximately expressive and literary types at Kinneavy)
- c. *operative texts*: persuading someone to do something (persuasive texts)

Reiss accepted that mixed forms may exist and that sometimes a target-text has a different function in the target culture than what the ST had in the source culture. These cases, however, were not considered to be “translations”, and as a result, were not discussed in her works.

Furthermore, Reiss (1971, 2000) suggested that text-type determined the overall translation strategy and the exact translation techniques that had to be used with each text type. Thus, for example, in informative texts, content must be preserved for the sake of style, whereas in expressive texts it is the effect that must be kept constant. This is not achieved by leaving the content unattached but by using *means* that produce similar effects (e.g. poetic means).

Later Reiss included a fourth category in her system, that of *audio-medial texts*, which are defined as texts conveyed to the receiver by some non-human mediator. Audio-medial texts, however, are not defined by function, but by the type of medium they use. As a result, they are an odd-man-out in the categorization. Perhaps, this is one of the reasons why Reiss later withdrew this category from her classification.

Reiss (2000) is of the opinion that the broad categories of text-type and the related notion of text functions are much more useful for translators and translation studies than the infinite and unstable category of genre.

Trosborg, as opposed to Reiss, believes that we must draw upon *the knowledge of each concept* described above if we want to create, understand or translate texts. “Lack of relevant knowledge of genre, communicative functions, text types and culture may result in distorted translations.” (1997, 19) She also suggests, that registers and genres vary with culture and

language, as a consequence, the translator must be familiar with both cultures he or she is working with.

As is clear from the above, text-type, genre and register are closely related to translation though the exact nature of the relationship has not been clarified yet. For our study (and ideally for all empirical studies), the most important consequence is that text-type and genre must be identified as exactly as possible. Otherwise further comparisons with other studies cannot be carried out.

2.2.1.3. Conclusions on text-oriented translation theories

Text oriented approaches enriched translation theory and didactics in two major ways: On the one hand, they shifted the attention from word and sentence to a larger unit, that is the text, which is now seen as more than just the sum of the parts. On the other hand, and partly as a result of this shift, sophisticated methods for analyzing texts and recognizing and using textual devices in different languages were and are being constructed. This is one of the most popular research trends in translation studies recently.

As Fawcett (1997) remarks linguistic theories of translation represent only one possibility of utilizing linguistics in translation studies. Another possibility is *to use linguistic knowledge in the process of translation*. Several authors adopt this approach (e.g. Fawcett himself, or Baker, 1992) present linguistic terms and concepts and discuss how findings of linguistics (e.g. semantics, syntax, and sociolinguistics) can be used in the actual production of target texts. We must note, however, that these authors – whether they are aware of it, or not – locate themselves within the broad domain of linguistic theories. Simply the assumption that linguistic knowledge is at the heart of the translation process, and as such, it can assist this process, clearly distinguishes these authors from their functionalist colleagues.

2.2.1.4 Linguistic theories in translation: a summary

As we have seen, linguistic theories try to account for translation on the level of sign systems. Fawcett (1997) argues that this might be called as researching translation as ‘langue’ in the Saussurean sense. Radical linguistic theories might cut themselves completely off of the surrounding reality and may envisage an ideal, ‘in vitro’ translation situation and look for solutions on this abstract level. More moderate theories usually take into account several factors outside language as well. It is usually tradition or the emphasis in their theory which places them within linguistic theories.

Linguistic theories are relevant for our study as we are convinced that translation itself is a *linguistic* activity. This is reflected in our translation competence concept (see *Section 2.3*) and in the evaluation of target texts. Furthermore, translation oriented text-linguistic concepts played a crucial role in the selection of source texts.

2.2.2. Functionalist theories in translation

The contradiction between word-for-word and sense-oriented translation is usually traced back as far as the work of Cicero (Stolze, 1994; Nord, 1997b; Wilss, 1996), but functionalists claim (Nord, 1997) that the first true forerunner of functionalist theories was Eugene Nida with his distinction between formal and dynamic equivalence (see *Section 2.2.1.1*). However, Nida's theory is basically a linguistic one, closely related to Chomskyan linguistic approaches (see his three-stage model in the previous section). As the 60s and the 70s were the golden era of structural linguistics, it was Nida's linguistic model that had received more attention and support first, and thus it had more influence on the early development of translation theory than the idea of dynamic equivalence (Nord, 1997b).

From the 1980s there was a growing dissatisfaction with equivalence based linguistic theories of translation, particularly among professional translators and those who worked in training institutions. They felt that linguistic theories systematically underestimate the importance of some essential aspects of the translation process. As a result, they made an attempt to incorporate these elements into a general theory on the basis of their experience.

2.2.2.1 The link between linguistic and functionalist theories – Katharina Reiss

In her book *Möglichkeiten und Grenzen der Übersetzungskritik* (1971) Katharina Reiss developed a model of translation criticism based on the functional relationship between the ST and the TT (see *Section 2.2.1.2*). Reiss's early theory is an equivalence-based theory, too, though she admits that – due to the translation brief - there may be certain exceptions from the equivalence requirement: e.g. situations where the TT should have a different function in the TC than what the ST had in the SC. However, these cases were labelled 'transfers' and were not given the status of translation proper by Reiss.

In Reiss and Vermeer (1984) Vermeer presents a general theory of translation, whereas Reiss elaborates further details of her specific theory and tries to fit it into Vermeer's theory. In this later model Reiss does not regard functional equivalence as a standard aim in translation any more. As a result, the classification and the analysis of the ST in its original form will be limited to those cases where the TT must have the same function as the ST. These types of translations are called *communicative* or imitating translations.

As suggested in the title of this section, Katharina Reiss can be regarded as a link between linguistic and functionalist theories. It is not primarily because she started out as a 'linguist' and ended as a 'functionalist'. It is rather her whole well-balanced approach, which is guided by function and is rooted in text-linguistics that makes her work a bridge overarching the gap between radical linguistic and functionalist orientations.

2.2.2.2 The theory of action in translation

Action-oriented theories within translation studies are usually associated with Justa Holz-Mänttari (1984) and some of her followers (e.g. Risku, 1988) but Vermeer's *Skopostheorie* (Reiss and Vermeer, 1984) and Nord's (1991) text-linguistic approach include many of their elements too.

The basic idea of action theory is that translation is a form of *professional* (human) action; moreover, it is a form of *communicative* interaction. These assumptions have some serious consequences for the way translation is perceived.

First of all, the distinction is made between 'translational action' (everything what translators do) and 'translation' (rendering a text) (Nord, 1997b).

Translating is seen as an *intentional* interaction. Intentions are important because decisions are based on them.

The fact that translation is an *interpersonal* interaction implies that it is a ‘multi-party’ activity. The different persons who are involved in the interaction (may) have different functions and roles in the process. Holz-Mänttari (1984) analyzes the role of the following agents: the initiator, the commissioner, the translator, the ST producer, the TT receiver and the TT user. The most important role is that of the translator whose expert role is underlined again and again. However, it is not only his/her language and transfer skills that determine the success of the translational action, but his/her ability to negotiate the needs of the different ‘agents’ in the translation process. We have to note here that different agent roles may be fulfilled by one and the same person (e.g. the ST author might be the initiator too).

The *communicative* nature of translation is given special attention. Communication is seen as an interaction carried out through signs (Nord, 1997b). As signs are culture-specific and as people usually interpret signs within the framework of their own culture, transferring meaning from one sign system to another can be rather problematic.

In close connection with this, translation is also regarded as an *intercultural* action, which means that the translator has to bridge the gap between realities of two cultures (Nord, 1997b). Finally, translation is labelled a *text-processing* action indicating that the production of the TT is not just an accurate reproduction of the ST in the TL but an autonomous, creative action depending on several other factors (e.g. function, agents, cultures involved etc.) than the ST (Reiss and Vermeer, 1984).

Theories of action belong to the radical stream of functionalist translation theories. They strongly oppose pure linguistic approaches and clearly neglect the analysis of linguistic aspects in favour of more practical issues like the translator’s behaviour in certain problematic situations. Their practice orientation, however, is a double-edged sword: while it sheds light on some important issues that had never been discussed before, and that can be extremely useful in translator training when preparing future professionals for the job, it disregards the linguistic aspects of translation, which compels prominent scholars and professionals to distance themselves from such a radical theory (Newmark, 1991, Wilss, 1996).

2.2.2.3 Vermeer’s Skopostheorie

Skopostheorie and its ostentatious German terminology are attributed to Hans J. Vermeer (Reiss and Vermeer 1984). The theory received its name from its central concept. *Skopos* is a Greek word for ‘purpose’ and in Vermeer’s conception it is the key principle guiding the translation process. In other words, it is the aim of the TT that the translator has to take into consideration when he/she brings decisions: “the end justifies the means” (Reiss and Vermeer, 1984, 101). Vermeer hopes to solve the eternal dilemma between free and faithful translation with the *Skopos rule*.

The Skopos (or the skopoi, as there can be more than one of them) is determined by the client’s needs. As a result, the translation can take the form of anything between free adaptations to literal, word-for-word translations. Thus, it is not true, that according to functionalists, translation is an automatic adjustment to the expectations of the target culture (Nord, 1997b).

The client’s needs are usually included in the *translation brief* (Janet Fraser’s term, 1996b). The translation brief is a more or less explicit wording of the translation situation. It contains information on the origin of the ST, on where and when the TT will be published (if so...), the recipients etc. In many cases not all the necessary information is included in the translation brief. In these cases, the translator must figure out this implicit information or ask for them explicitly.

In addition to the Skopos-rule, two other rules regulate the translation process: the *coherence rule* (responsible for the TT's adjustment to the TC communicative situation) and the *fidelity rule* (controls the ST-TT relationship). The three rules are in a hierarchical relationship (Reiss and Vermeer, 1984).

A consequence of these rules (and of the underlying philosophy) is that *the ST has lost the prestigious position it had in linguistic theories*³. Vermeer talks about the “dethronement” of the ST (Reiss and Vermeer, 1984) and he justifies it with the assumption that there is no inherent meaning in texts, meaning is always (re)created by the receivers. As a result, Vermeer considers the ST to be a mere ‘offer of information (“Informationsangebot”) in L1. On the basis of this offer another offer of information in the L2 must be prepared. *The way the translator handles the offer of information in the L1 depends on the purpose of the translation, and not the abstract knowledge of the two language systems.*

Consequently, *equivalence has become an irrelevant term* for most functionalists, as the primary requirement with regard to the TT is that it should be functionally appropriate (funktionsgerecht). However, since the relationship of the ST and TT is still a central problem in translation, functionalists had to introduce new concepts and terms to describe this relationship. Vermeer used the word ‘*fidelity*’ and Reiss (2000) introduced the concept of ‘*adequacy*’ (Adäquatheit) to account for this relationship. The two concepts are not identical, but they share the belief that it is the communicative purpose of the translation that defines the relationship of the TT and the ST.

Finally, skopostheorie, just as action theory, attributes great importance to *culture*. For functionalists “translating means comparing cultures” (Nord, 1997b, 34). This means that no translation process can be successful if the translator does not take into account cultural differences in value systems, norms, symbols, behaviour, realia etc.

Vermeer's ideas were accepted with enthusiasm by some theorists and professionals, but his extremist position has fuelled others, especially representatives of the linguistic tradition (e.g. Newmark, 1991 or Wilss, 1996) to criticize him harshly. Some critics (Stolze, 1994; Wilss, 1996; Nord, 1997b) remark that Reiss and Vermeer's book does not present itself as a coherent whole: there is a clear discrepancy between the revolutionary views of Vermeer and the more moderate approach of Reiss. As a result, most of the criticism is directed against Vermeer. The most important criticism involves that Vermeer exaggerates the importance of purpose and downplays the role of language in translation processes.

2.2.2.4 Christiane Nord and the functionalist approach in translator training

Ch. Nord took up Reiss and Vermeer's theory and slightly adapted it for academic and didactic use. In the 90s Nord became one of the leading figures in functionalist theory, and probably, the most widely read, too. The reasons for this are manifold. On the one hand, Nord preserved the original wit and rigour of functionalist thought but she succeeded in finding a language that is much easier to understand than Reiss and Vermeer's original terminology. On the other hand, Nord has concentrated on translation teaching, which made most of her work more real-life-like. Nord's most important contributions are her idea of loyalty, a method for ST analysis, a typology of text functions, a functional typology of translations, a typology of translation problems and translation errors and some ideas on translation evaluation and translation units (Nord, 1991, 1992a,b, 1996, 1997a,b). We will discuss these issues in the following paragraphs.

³ In fact, Nord herself distinguishes between functionalist and linguistic theories on the basis of how they handle the ST (1997a).

Nord's *concept of 'loyalty'* is related to Vermeer's 'fidelity' and Reiss's adequacy in that it is supposed to take the place of equivalence in functionalist theory. However, loyalty was born as an attempt to resolve two dilemmas inherent in Skopostheorie according to Nord. One of them is the fact that no matter how culture sensitive Skopostheorie is it cannot account for the fact that translation itself is a cultural phenomenon. To be precise, people at different places and different times have different concepts of what (a good) translation is. It is a moral responsibility of the translator not to deceive them by forcing his/her concept of translation on them.

The other problem concerns the relationship of the translator and the ST author. The translator must not betray the ST author by producing a TT which is fully functional in the TC but is controversial to the intentions of the original author.

To solve these problems, Nord introduces the principle of loyalty which is understood as an interpersonal category that commits the translator bilaterally to the source and target sides:

“The loyalty principle obliges the translator to take account of the differences between culture-specific concepts of translation in the two cultures involved...”

“it induces the translator to respect the sender's individual communicative intentions, [thus]... it reduces the prescriptiveness of “radical functionalism”. (Nord, 1997b, 126)

Nord's personal conviction is that “function” (goal-orientation) must be coupled with loyalty to allow translators to produce good translations. Taking function into consideration makes the TT work in the intended way in the target situation. On the other hand loyalty to the recipients and the original author reduces the choices the translator may have in assuring the intended TT function.

It can be seen from this account that Nord, just like Reiss, takes a much more moderate position within functionalism than Vermeer. Her ambition to balance functionalism and text-linguistic theories is even more evident in her ideas on *text analysis* in translation.

Nord stresses the importance of the *translation brief* in educational context repeatedly.

“The translation brief should contain (explicit or implicit) information about

- The (intended) text functions
 - The target-text addressee(s)
 - The (prospective) time and place of text reception
 - The medium over which the text will be transmitted, and
 - The motive for the production or reception of the text.”
- (Nord, 1997b, 60)

Without a translation brief that tells the student who he/she translates for and why, the task is not fully defined.

The translation brief informs the translator on the function of the TT. Nord drawing on Bühler's organon model (1934) and Jakobson (1960, in Hungarian: 1969) sets up a classification of text functions for translation. She identifies four basic text functions, which are as follows:

- 1) referential function: reference to objects and phenomena of a (perhaps fictional) world
- 2) expressive function: refers to the sender's attitude towards the objects or phenomena
- 3) appellative function: induces the receiver to respond in a particular way
- 4) phatic function: establishes, maintains and ends contact between the sender and the receiver.

Nord lists the sub-functions of each function and gives a detailed description of the possible translation difficulties associated with these functions. She also notes that texts are rarely monofunctional and the translator must be able to find the hierarchy of functions on the basis of verbal and non-verbal markers.

As function is the key concept in this approach, Nord's classification is of high significance. The translation process must begin with the analysis of the translation brief and the ST, and the first step on this stage is the identification of the ST function and intended TT function. Nord's categories might be of great help at this point.

Nord drew up not only a classification of translation functions but a *typology of translations* too. She makes a distinction between documentary and instrumental forms of translation. In case of *documentary forms of translation* the target text can be seen as a document of the original interaction in the source culture (Nord, 1997a, b) and the main function of these translations is metatextual. They allow the target reader to "see" what the original was like. Thus, these kinds of translations do not usually conform to TL expectations or only partly do so.

When the TT should have a certain 'real' communicative function in the TC, that is, we do not expect the readers to notice that they are reading a translation, we speak about *instrumental forms of translation*. Sub-types are defined for both types of translation.

Nord's typology of translations clearly shows that functionalism does not mean that the translator should always conform to TC and TL norms. But it does mean that the translator should be aware of what type of translation he/she is engaged in, and he/she should adjust his/her strategies to that translation-type.

Nord, too, stresses the importance of norms and conventions in translation. Translators should be aware of genre and style conventions in different languages and cultures, and should be able to handle them. Similarly, they ought to be knowledgeable about culture-dependent translation conventions too.

One of Nord's most important contributions to translation theory and didactics is her definition of *translation problems* and their *classification*. Nord makes a distinction between *translation difficulties* and translation problems, difficulties being a subjective category, which refer to the individual translator's lack of know-how when translating a certain text. These difficulties arise as a result of shortcomings in the translator's linguistic and/or cultural competence or knowledge. *Translation problems*, on the other hand, form an objective category, and denote points in the text the translation of which cannot be solved without specific strategies. With sufficient knowledge of the two languages and cultures involved and of the translation brief, we can predict translation *problems*. Nord reminds us that translation problems will always remain problems even if the translator has learnt to handle them automatically.

It is important to note here that the term 'translation problems' is used in a wider sense in the psycholinguistic research tradition on translation processes. Any points in the text that require conscious processing are labelled problems (e.g. Krings, 1986b; Königs, 1987; Lörcher, 1991b etc. see also *Section 2.5*). Thus, 'translation problems' in the psycholinguistic tradition comprise both translation problems *and* difficulties in Nord's terminology.

Nord classified translation problems as follows:

a) *Pragmatic translation problems* (PTP) problems that appear as a result of the contrast between the ST situation and the TT situation. Examples: translation function, culture-bound terms, space restrictions

b) *Intercultural translation problems* (CTP): arise from differences in verbal, non-verbal and textual conventions between the cultures involved in translation. E.g. measuring conventions,

formal conventions, text-type conventions, conventional forms of address and salutation formulae.

c) *Interlingual translation problems* (LTP): caused by structural differences in vocabulary, syntax and suprasegmental features of two languages. Sources of help: comparative grammar, didactic translation grammar

d) *Text-specific translation problems* (TTP): arise in the translation of one specific text and their solution cannot be generalized. E.g. metaphors, similes, puns etc.

Translation errors are closely related to translation problems: if a problem is not solved appropriately, an error will emerge. Consequently, the functional classification of errors corresponds to that of translation problems. There are pragmatic, cultural, linguistic and text-specific errors. However, errors are always defined in relation to the purpose of the translation process.

“An utterance is never inadequate in itself, it becomes inadequate with regard to the communicative function it was supposed to achieve” (Nord, 1997b, 73)

According to Nord, both translation problems and translation errors form a hierarchy. Traditional linguistic methods supported a bottom-up approach in the translation process where the course of action started with the analysis of linguistic surface structures and proceeded to higher levels of conventions and pragmatics. Functionalist approaches promote a top-down approach, in which the analysis on the pragmatic level (intended function) precedes all lower-level analysis. The results of the analysis of the intended function help the translator decide the functional hierarchy of problems.

The hierarchy of translation errors conforms to the hierarchy of translation problems, and in the end, to the function of the translation. Errors can only be identified in the light of the translation brief. The weight of each mistake also depends on which function is predominant in the actual translation situation.

Nord offers a novel concept of *translation unit*, as well. The notion of translation unit was introduced into translation studies by Vinay and Darbelnet (1958, cited by Nord 1997b) and they defined it as

“the smallest utterance segment in which the cohesion of the signs is such that they do not have to be translated separately”
(Nord, 1997b, 68)

Linguistic-oriented theories usually perceive translation units as horizontal units of differing length. Nord introduced the notion of *vertical* units or *functional* units. The intended function in a certain text is usually marked at different levels. All the markers that point to the same function form a unit. This is called the functional or vertical unit.

2.2.2.5 The criticism of functionalist theories

In her book Nord (1997b) summarizes and answers the criticism against functionalist theories. She concludes that criticism is levelled at functionalism on three levels: theoretical, meta-theoretical and practical. Many of the criticism she cites are not relevant for the present study (e.g. the applicability of functionalism to literary translation), so we will concentrate and elaborate only on issues relating to our research.

Some critics remark that ‘Skopostheorie’ is not an original theory, because linguistic theories take function into account too. Nord disputes whether linguistic-oriented approaches would seriously integrate function into their models. She is of the opinion that they only touch upon

issues of function. In contrast, functionalist approaches offer a systematic theory with a focus on function.

One of the most often announced critique on functionalist approaches is that they step over the limits of ‘real’ translation and are only a theory of adaptation. Nord claims that modern linguistic theories are just as flexible as functionalism in including non-traditional translation forms in their definitions (she cites Koller, 1995) but their model is not as systematic and comprehensive as functionalist models. Consequently, linguistic approaches cannot account for (often traditional) types of translation functionalists can.

However, Nord admits, that functionalist theorists are often pre-occupied with non-traditional translation types which might give the impression that functionalism is a theory of “free translation” though it is meant to be a general, systematic theory.

The most serious charge against functionalism is that it “does not respect the original” (Nord, 1997b, 119). It was probably Vermeer’s attempt to “dethrone” the Source Text, which had been held “sacred” for centuries, that created aversion in many theorists (Wilss, 1996, Newmark, 1991). Nord, however, insists that dethroning does not mean “murdering or dumping the ST”. It merely means that the ST is not the one and only yardstick for translation any more. Nord’s more moderate view definitely contributed to a large extent to the slow acceptance of functionalist theories in the 1990s.

It is often argued that functionalist theories are not based on empirical findings. Nord accepts this criticism and urges empirical research with a functionalist orientation. Nonetheless, she adds that to date we know of no translation theory that would be backed up by an array of empirical findings.

2.2.2.6 Concluding remarks - the impact of functionalist theories

As opposed to the static view of linguistic theories, functionalists perceive translation as a form of human interaction, a specific form of communication. As a result, the purpose of interaction (skopos) becomes the central concept in their theory. Although functionalists strive to mark a clear-cut border between equivalence-based theories and themselves, we cannot deny that many of their ideas were already present in linguistic theories (e.g. Nida, Reiss or Koller) too. Nevertheless, the *primacy of function* clearly distinguishes these theories from linguistic-oriented approaches. As they attribute different weight to the different elements in the translation process, they rearrange the pattern of translation.

We are of the opinion that the reception of functionalist theories is negatively influenced by the early theories’ (particularly Holz-Mänttäri’s and Vermeer’s) radical break not only with the ST but with the linguistic nature of translation in general. Vermeer’s statement is characteristic of this view:

‘Linguistics alone won’t help us. First, because **translating is not merely and not even primarily a linguistic process**’
(Vermeer, 1987, cited by Nord, 1997b, 10.)

We would like to emphasise here that Vermeer not only states that translation involves more than the knowledge of two (or more) languages but he *locates translation outside the realm of linguistics* and language skills. It is no wonder that approaches more oriented toward training take a moderate stance: if translation is non-linguistic in its very nature, than it should be trained outside the realm of languages and linguistics. Of course, it is impossible. As we have seen, Nord’s approach concentrates on how non-linguistic factors advocated by functionalists must be taken into account in translation *and* how they appear on the level of language. Her integrated view gained broader acceptance than early radical theories.

A striking feature of functionalist theories is their practice-orientation: many theorists has worked or are still working as translators and this may exert a huge influence on their

orientation. Certainly, many representatives of linguistic theory worked as translators, too, but most of them have a strong (primary) academic background in linguistics. This may have an effect on the reception of these theories: functionalist theories may appear less ‘scientific’ for some, but more real-life-like and applicable to others. The opposite may be true for linguistic theories.

It was probably translation teaching that was most clearly affected by functionalist theories. There are numerous endeavours to involve intercultural communication, (parallel) text-analysis and functionalist evaluation techniques into translator training (see the volumes edited by Dollerup and Loddegard, 1992; Dollerup and Appel, 1996; Malmkjaer, 1998; Schäffner and Adab, 2000).

2.2.3 Integrating linguistic and functional viewpoints: *setting up a theoretical framework for the present study*

Whereas several studies (e.g. Jääskeläinen, 1999; Risku, 1998) claim to be functionalist in orientation, we would like to argue that a *combination of linguistic and functionalist* approaches as a background serves the purposes of our study best. In our approach to translation ideas of both functionalist and linguistic theories play an important role. Functionalism serves more as a guideline, or as a philosophy to steer the translator’s decision. The linguistic side of translation is the actual performance: it is carrying out what was decided, it is the level of concrete operations with language. The translator cannot set aside either functional and contextual issues or linguistic rules when performing his/her job. An integration of linguistic and functionalist viewpoints is advocated by some recent studies as well (e.g. Klaudy, 2003; Mossop et al., 2005)

Translation theories not only have indirect relevance to our study by influencing our notion of translation, but their direct impact can be pinpointed as well. *Functionalism* affected what we could call the macro-level of planning, the principles of the investigation:

- the idea that translation is viewed and investigated as a communicative act (and not as a mere linguistic transfer),
- the principles guiding text selection,
- the use of the translation brief,
- the principles of evaluation,
- the idea of positive evaluation, and
- Nord’s typology of errors

originated from functional theories.

The *linguistic approach* had a strong influence on our translation competence concept (see *Section 2.3*). Text-linguistic theories and typologies were drawn upon in text selection and translation errors were recognized in language. This is probably the most important contribution of linguistic orientation to our study: translation, by definition is always done with languages, as a result, errors, whatever their classification is, always appear as errors in language use. A linguistic background was indispensable in detecting and classifying errors. Last, but not least, the nature of TAP analysis itself is called ‘microlinguistic’ by Mossop and his colleagues (2005).

In the next section we turn to the focus of our study, translation competence and try to give a comprehensive analysis of its concept.

2.3 Conceptualizing Translation Competence

In the 1990s we could witness an increased interest in translation competence. The reasons for this were manifold: on the one hand, the psycholinguistic approach within translation studies experienced a minor boom, which is evidenced by the comparatively large number of process-oriented investigations. The translation process, however, cannot be investigated without making reference to translation competence. On the other hand, institutional forms of translator training started to take shape in the last decades of the past century. As a result, more and more attention was paid to the „entity” that should be formed in translator training, that is, to translation competence.

Nevertheless, the concept of translation competence is still far from being well-formed, in fact, it is rather blurred. In many cases, statements on translation competence seem to be only necessary „by-products” of a research project with a completely different focus. As a result, they are not worked out in detail. In other cases, the use of the word „competence” seems to be rather arbitrary in a sense that it is not firmly grounded in concepts of competence so widely debated in cognitive science. One has the impression that translation theorists use the term „competence” just because it is „in” nowadays. We seldom find any explanations, why they do not use another term e.g. ability or skill, instead. Generally, it is a problem, that terms like translation competence, proficiency, expertise, ability and skill are not defined, not even by individual authors. The reason for this is probably, that most of the authors are linguists or translation scholars and do not feel such an urgent need to clear these concepts. However, we must add that different concepts of translation competence vary on the degree to which they rely on concepts of cognitive science and on the degree authors explicate this relationship.

The aim of this section is to review concepts of translation competence. On the one hand, we would like to present a state-of-the art review on what we know about translation competence. On the other hand, we would like to draw attention to shortcomings of the existing conceptualizations. It is very important to pay attention to these shortcomings, and to compensate for them as soon as possible because flaws in conceptualizations eventually block further investigations, especially empirical research.

In this chapter first we examine what cognitive psychologists understand under the general term „competence”. Then problems of classification will be discussed, which is followed by a critical review of the translation competence models. Finally, a competence model for our study will be selected and the selection will be justified.

2.3.1 Competence from the perspective of cognitive psychology

In his seminal article Franz Weinert (2001) made an attempt to clarify the concept of competence by describing, analyzing and evaluating different approaches. He defined competence as “a roughly specialized system of abilities, proficiencies or skills that are necessary or sufficient to reach a specific goal” (Weinert, 2001, 45)

Furthermore, he argued that there is *no single common conceptual framework* for competence. This may be of prime importance for translation competence, too. In his effort to classify approaches to competence, he could identify nine different ways as the concept “competence” was used. These are as follows:

General cognitive competences

In this sense competence is a general cognitive prerequisite for further development. Everybody has it, although it is not equally distributed. General cognitive competences are thought to develop over time. Psychometric approaches of intelligence, information-

processing models of the human mind and the Piagetian approach use “competence” in this sense. However, this approach has hardly any significance for translation competence.

Specialized cognitive competences

Specialized cognitive competences are defined as “clusters of cognitive prerequisites that must be available for an individual to perform well *in a particular content area* (e.g. chess playing, piano playing, automobile driving [...] etc.)” (Weinert, 2001, 48). These are the specialized competences everyone can or could do, but only few really learn. Translation competence obviously belongs to this group.

It is not so much general cognitive abilities that determine the level of specialized cognitive competences, but content-specific knowledge. According to this view, competence is *learned*, but the success of learning may depend on abilities to acquire expertise.

Weinert concludes that this approach to competence has strong advantages over ability-centred definitions because of its orientation to define learning prerequisites for further development.

The Competence-Performance model

The „original” competence-performance model can be traced back to Chomsky’s distinction between linguistic (language) competence and linguistic performance. By now, the meaning of the word „competence” diverged from Chomsky’s original theoretical meaning but the basic distinctive features are still recognizable. At this point, we must diverge from Weinert’s account as his discussion of Chomsky’s concept of competence is somewhat flawed. Weinert does not make any reference to Chomsky’s distinction between language competence and the language acquisition device (LAD). As a result, Weinert identifies Chomsky’s competence concept with the LAD itself, suggesting that it is competence in Chomsky’s sense that enables us “to acquire the mother tongue”. However, Chomsky (1979) himself proposed that it is the LAD that governs language acquisition, the outcome of which is language competence (the knowledge of rules and structures). Performance, in this sense, is actual production, and it shows intra- and inter-individual varieties.

The Chomskyan model is widely used in cognitive psychology, thus its most important features should be listed here:

- i) domain specificity of competences;
- ii) an inborn capability to acquire competence;
- iii) competence is the result of rule-based learning;
- iv) competence cannot be observed directly; what we can observe is performance, but performance is determined not only by competence, but by situational variables, too.

As translation competence is obviously related to language, the Chomskyan model is often drawn upon by translation scholars (see *Section 2.2.1 Linguistic approaches* or Pym, 2003)

Modifications of the Competence-Performance Model

These approaches refined the original Chomskyan model, usually by adding variables to the competence/performance distinction or by splitting up the elements of the original model (e.g. into .conceptual, procedural and performance competence).

Cognitive Competence and motivational action tendencies

Realizing that motivational tendencies are closely related to cognitive competence, some authors *included self-concept, achievement motive and personal control beliefs* in their concept of competence. According to Weinert, these variables make up the subjective dimension of competence. As we will see, there are initiatives in translation studies, too, to include subjective elements into translation competence.

Objective and subjective competence concepts

This distinction is very similar to the previous one in that it defines objective competence as performance, and performance dispositions and subjective competence as performance related abilities and skills (further differentiated into heuristic, epistemological and actualized competence)

Action competence

These conceptions include all those cognitive, motivational and social prerequisites that are necessary for learning or for being successful in a profession, social group etc. Comprehensiveness is the main characteristic feature of the approach, and this can be defined as its major advantage and disadvantage at the same time. As we will see below, some „all-inclusive” models of translation competence may belong to this group. Furthermore, some functionalist theories, especially the works of Justa Holz-Mänttari (1984) are also related to this conception.

Key competences

The underlying assumption of these approaches is that there are certain competences that form the base of other competences and as such, determine success in learning, profession, or in other activities. Such competences may include mental arithmetic, literacy, planning for problem solving, computer skills, communicative and language skills, critical thinking etc. No matter, how appealing the idea of key competences is, its applicability is troublesome, largely because fostering them in isolation seems to be useless and because they cannot make up for lack in content specific knowledge and skills. This implies that key competences may exist, their training is, however, only meaningful in a specialized context.

This has severe consequences for training translation competence. It is obvious that translation competence is not a key competence but it heavily relies on several key competences. Nevertheless, we cannot expect that the necessary key competences will automatically work in translation. Transfer probably has to be assisted and fostered and some key competences (e.g. problem solving) must find their specialized forms.

Metacompetences

Metacompetences refer to people's *awareness* of their knowledge and skills. They are supposed to help the acquisition of new competences and the effective use of available competences. Although the concept of metacompetences is very popular these days, a word of caution must be added here: the more general a metacompetence is, the less it can contribute to specialized, real-life performances. As a result, it is necessary to acquire many specialized metacompetences (e.g. metalinguistic competences).

The problem of metacompetences can be a „hot issue” for research on translation competence, as there are some hints (Jääskeläinen, 1996, 1999; Sirén and Hakkarainen, 2002) that awareness of what one does is a basic feature that distinguishes professional

translators from naïve translators. In addition, Malakoff and Hakuta (1991) suggest that translation performance may depend on metacognitive competences.

As we have seen, there are several competence concepts in use in psychology and in educational science. It is evident that none of these concepts is superior to the others in any sense, and none of them can be labelled the real “competence” concept either. It depends much more on the focus of the actual research which competence model will be taken up.

In the following sections, an attempt will be made to relate translation competence models to Weinert’s categories.

2.3.2 Classifying Concepts of Translation Competence

Before turning to classification itself, some general remarks on translation competence concepts should be made. The most important of these is the observation is that most translation competence concepts are scarcely more than mere ideas or *hints that lack elaboration*. In translation studies, we seldom find such sophisticated competence models as those of language competence (e.g. Bachman, 1990 or Canale and Swain, 1980) or social competence (see e.g. Meichenbaum et. al, 2003). As a result, these brief hints are often cited and taken as a guideline for further research or conceptualization. As a rule, these “concepts” grasp translation competence excellently from one aspect, but neglect its complexity. This neglect cannot even be held against the authors as their prime aim is typically not the design of a competence model. No matter, how appealing these dense suggestions are, if we take a closer look, it usually becomes obvious that they miss important aspects of translation competence and as a result, they cannot serve as a base either for empirical research or for a teaching program.

Furthermore, most translation competence concepts are not based on empirical research, and they are usually not tested empirically either (for exceptions see Stansfield et al., 1992; Campbell, 1991, 1998; or the works of the PACTE group, 2003, 2005). In consequence, many concepts are simple speculations, which, nevertheless, may have massive influence on the research community.

The classification of translation competence concepts is a rather problematic issue. Classification means grouping things together on the basis of shared characteristics. It is obvious that the more characteristic features of a model are made explicit, the easier it is to categorize that model. However, hints or suggestions are very difficult to categorize because important details of the concepts are not made explicit, so there is hardly anything to compare. There remains the possibility of using Weinert’s system for categorizing translation competence concepts. However, Weinert’s system is too detailed for existing concepts of translation competence: many of his categories would be empty, and in many cases it would be difficult to decide which category a competence concept belongs to. Weinert’s system is better used as a conceptual background that helps to identify certain features of translation concepts.

A possible base for categorization would be the origin of the model (Dróth, 2001b): sometimes it is pure theory (e.g. Hatim and Mason, 1997), sometimes it is translation teaching (e.g. Nord, 1992), sometimes it is professional practice (e.g. Kiraly, 2000 cited by Dróth, 2001b), and we can add empirical research, as well (e.g. Campbell, 1991, 1998). The problem, again is, that in most cases the origins of the model are difficult to identify; or, there are multiple origins. Once again, there would be nearly as many categories as concepts.

In an article published in 2003 Pym suggests that approaches to translation competence should be grouped into four categories. The categories are as follows:

1. competence as no such thing
2. competence as a summation of linguistic competences

3. competence as multicomponential
4. competence as just one thing

Pym's categories are based on the content or components of competence concepts, and although we do not always agree with his categorization of individual concepts, we consider his classification the best to date and, with some slight modifications we will adopt it as a basis for our categorization.

The modifications we suggest affect the multicomponential class, which we think is better to split up into two subcategories, as it is too heterogeneous. In addition, it seems that the category of "competence as no such thing" is best eliminated. It is not quite clear what Pym means by this category. Its name would imply that concepts in this category explicitly deny the existence of the construct of translation competence. However, the examples he gives are not approaches in which the existence of competence is denied or the term *competence* is rejected. In most cases, the researchers referred to (e.g. Lörcher, 1991b; Shreve, 1997; Risku, 1998 etc.) simply turn their attention to other concepts (e.g. performance or expertise) or use other models to explain translation competence (e.g. Shreve). The only authentic case in this category is the early Wilss (1976), but as Pym himself suggests the term "competence" had a meaning in 1976 different from its meaning in 2006: it was still much more bound to Chomskyan linguistics. As a result, it is no wonder that Wilss was sceptical about the existence of translation competence in that sense and even more reluctant to define it. Later on, Wilss changed his concept of translation competence several times. In any case, it is clearly superfluous to include a category that denies the existence of translation competence, particularly if it is empty.

In the following sections we shall briefly outline the most important translation competence concepts sorted into Pym's categories. We are aware that there are several other concepts of translation competence that could not be included in this account (e.g. Bell, 1991; Ulrych, 1999 or Kiraly, 2000) but we hope to have covered the ones that are relevant for the present study.

2.3.2.1 Translation competence as a summation of linguistic competences

According to these concepts translation competence consists of L1 and L2 competence. Apart from Wilss (1996) who proposes the existence of a selective decoding (SL text-analytical) and a selective encoding (TL text-reproductive) component of translation competence, Pym classifies Ballard (1984), Koller (1979) and Harris (1977, 1978, 1980) as belonging to this category. It must be noted here that none of the authors above devised a detailed model of translation competence. Brian Harris's idea of natural translation, however, was adopted by many students of translation competence. His proposal is presented first, then it is followed by a short account of Stanfield et al's translation competence related research and finally a Hungarian competence concept, that of Dániel Ágnes is described.

2.3.2.1.1 Brian Harris and the concept of natural translation

In the 1970's Brian Harris exposed his ideas on natural translation in a series of articles (Harris, 1977, 1978, 1980, Harris and Sherwood, 1978). Harris had no intention to set up a competence model, but later his ideas were still received as such.

Harris investigated and analysed bilingual children's ability to translate and the development of this ability. Harris's main idea was that "*all bilinguals can translate*" without formal training (1977, 99) and this is a *universal, innate verbal skill* (Harris and Sherwood, 1978). Furthermore, he argued that *natural translation develops within "the limits of [the] mastery of the two languages"* (Harris and Sherwood, 1978, 155). Harris and Sherwood identified the

developmental stages of natural translation, too. Harris also insisted that natural translation should have priority in research (Harris, 1977).

Harris's idea of translation as an *innate* skill developing on its own positions his approach within the *Chomskyan view of competence* (the competence-performance model in Weinert's system). Nevertheless, this categorization is clearly problematic from the point of view that Harris never referred to "performance" (but of course, it could be easily deduced from his other assumptions). It should be noted here that Harris himself never used the term 'competence' either, he constantly talked about translation *skill*. However, this was probably not a conscious differentiation between skill and competence, but rather, a mechanical use of a term popular at that time. Nonetheless, many scholars think about natural translation as a concept of translation *competence* (e.g. Krings, 1986a, b; Lörcher, 1991b; PACTE, 2002 or Pym, 2003) – this is the reason why it is discussed here.

The main criticism against Harris's competence concept is that it is too narrow: it focuses on language competence and emphasizes the lack of training and spontaneous development, as a result, it cannot account for other types of translation competence, e.g. for professional competence (Lörcher, 1991b; Pym, 2003). Harris, however, never wanted to account for professional translation: his research focus was completely different. With a Chomskyan competence concept in mind, he concentrated on the *natural and universal development* of translation in bilinguals, whereas Pym (and many others mentioned below) use a specialized competence concept to account for professional translators' competence. At this point it becomes quite clear that none of the competence models is better than the others one but one model can be better suited for certain purposes than another. It is obvious that the innate hypothesis is of no use for translator training, but it is similarly obvious that bilinguals cannot be investigated with the same model as professionals.

We should note that Harris never claimed (or at least, we could not find any traces of it in his most widely cited works) that natural translation automatically develops into professional competence (or expertise, as we call it today). He simply did not investigate professional translation and its development, although in an article of 1978 he discussed the issue why bilinguals sometimes fail when facing the requirements of the profession. Furthermore, Harris (1975) himself suggested that translation should be taught both in translation training and in foreign language classrooms. This is in sharp contrast with later critics stating that he imagined the development of translation competence on its own.

To summarize, the idea of natural translation has become one of the most influential and controversial issues in translation studies. There are several reasons for this: Harris was among the first to embark on systematic research into the psycholinguistic aspects of translation. For this reason, subsequent research had to relate to his work in some way, whether this relation was positive or negative. The pioneering nature of his work also explains conceptual inadequacies we find in it and its incongruence with modern translation studies. We must not forget either, that Harris concentrated on bilinguals and his findings contributed primarily to what we know about bilinguals' linguistic development. Harris was the first to document scientifically the common sense knowledge that that bilinguals can translate, which contributed to his being widely cited. However, with his claim, that natural translation should be given primacy in research over professional translation he was swimming against the stream of Translation Studies, which was fighting for its independence those days.

In spite of the controversial opinions on natural translation, Harris's ideas are indispensable for our study as they provide the only framework for investigating non-professionals' competence.

2.3.2.1.2 *The concept of Stansfield's work group*

Stansfield and his colleagues conducted an empirical study to define *translation skill level descriptions* and to find out which language skills influence translation ability⁴. They found that translations can be evaluated along two dimensions: *accuracy* (of content/information transferred from the ST to the TT) and *expression* (which is the quality of the TT in terms of grammar, vocabulary, style etc.). Dróth (2001a) interprets this as two aspects of translation competence and Waddington (2001) applies their distinction in his study too. In this reading, translation competence consists of

- a) the ability to transfer information correctly; and
- b) the ability to produce well-formed target texts.

We must note here that Stansfield and his colleagues never constructed a competence (or ability) concept on the basis of their results; these are only inferred by other researchers (Dróth, 2001a; Waddington, 2001).

Because of the obvious linguistic orientation of the research, Stansfield et al's concept can be classified as linguistic, although with some reservations, because the authors themselves never defined the dimensions mentioned above in detail.

In Weinert's categorization Stansfield's concept fits into the "specialized cognitive competence" class, as the study focused on professional translators. However, it is not clear whether Stansfield and his colleagues made a distinction between non-professional and professional translation.

Stansfield's work represents a pioneering effort in translation testing, and it is still the only one that made an attempt to apply modern test theory in the evaluation of translation competence. Nevertheless, some shortcomings of their research should be pointed out. The authors claimed that they could not find any literature on translation competence (which was definitely true at the time). However, they did not even make an attempt to set up their own model, as a result, the study had practically no theoretical framework (at least from the point of view of translation theory), which caused problems of validity (see *Section 2.3.2.3*).

Furthermore, the division of translation competence into an *ability to transfer information correctly* and *to produce a well-formed target text* is intuitively appealing but at the same time it raises several questions.

- (a) These components are too complex: there must be several processes and skills that determine the success of information transfer and the quality of target text production. Probably, this is why Dróth (2001a) considers the model to be incomplete.
- (b) We do not know exactly what „correct" (information transfer) and „appropriate" (or well-formed) target text mean. This is where some shortcomings of the research owing to the lack of the theoretical background appear. Dismissing translation theory has the result that factors like text-type, translation brief, target text audience and their expectations do not even appear in the study. These factors, however, are assumed to play an important role in determining the actual meaning of „correct" and „appropriate".

Despite all of its shortcomings the design and the findings of the study are remarkable and could be used as good starting points for constructing both more elaborated concepts of translation competence and sophisticated methods for its evaluation.

⁴ Stansfield et al. use the term „ability" where one would expect „competence" in the literature of translation studies. There can be several reasons for this. Stansfield and his colleagues are primarily experts on language testing and not on translation and they may transfer some terms from their own field. On the other hand, their study appeared at a time when the use of the term „competence" was not so widespread and accepted at that time than it is nowadays. The fact that many translation scholars (e.g. Waddington, 2001; Dróth, 2001) consider Stansfield's concept to be a concept of translation competence justifies our decision to discuss it in our study.

2.3.2.1.3 A Hungarian view of translation competence – Dániel Ágnes

Dániel Ágnes's work (1983) is characterized by a marked linguistic orientation, and this is reflected in her views on what constitutes the translator's know-how, too⁵. Although she realized that language proficiency is a necessary but not sufficient condition of translation 'proficiency', she could not move beyond the realm of languages. She stressed the importance of the translator's sensitivity to the differences between the two languages involved in translation. In spite of the fact, that she emphasized *sensitivity to function*, she did not conceptualize it as a subjective, culturally determined notion as modern functionalist theories do, but as something objectively inscribed in language. Accordingly, she constructed her list of the 'skills' and abilities the translator needs as follows:

1. the ability to notice/realize lexical contrasts
2. the ability to notice/realize grammatical contrasts
3. the ability to notice/realize textual contrasts (differences in text construction and the related traditions)
4. other skills and knowledges (world-knowledge, use of reference materials, decision-making, creativity)

Dániel's list is surprisingly thorough, as nearly all the elements of later comprehensive models are represented in it. However, her obvious emphasis on contrastive linguistic abilities and her insistence on formulating a universally valid translation strategy (strong prescriptive orientation) places her concept into the traditional, linguistic category. Moreover, her view of translation is largely static and concentrates on the relation between the ST and the TT. We learn nothing about how the skills in the translator's know-how interact to produce a TT.

2.3.2.2 Multicomponential models of translation competence

Multicomponential models assume that translation competence consists of several, identifiable sub-components, many of which are not purely linguistic in nature. The majority of recent translation competence concepts are multicomponential, and they form an extremely heterogeneous group. As a result, we felt the need to further classify concepts in this category. Some of the models and proposals identify the *procedural components* of translation competence, that is, what the translator *does* in the translation process. These procedures are usually more or less translation specific and highly complex (e.g. source-text processing skills in Hatim and Mason, 1997).

Other models try to identify more or less *independent psychic components* that are *prerequisites* to carrying out the individual procedures in translation, in fact, the translation process itself (e.g. communicative competence in the two languages in the PACTE model). These models will be called *prerequisite models* while the first group will be labelled *procedural component models*.

A) Procedural Component Models

2.3.2.2.1 Hatim and Mason's model of translation competence

Relying on Bachman's analysis of communicative language ability (1990) and on their own theory of translation as text analysis and production, Hatim and Mason (1997) propose the following model for translation competence in their book:

⁵ The terms „competence” and „expertise” are not used by Dániel because they were not so common those days, particularly not in Hungary where both cognitive science and translation studies spread and developed at a much slower pace than in Western-Europe or in North-America.

- (a) **source-text processing skills** (recognizing intertextuality, locating situationality, inferring intentionality, organizing texture, judging informativity in terms of estimated impact on source text readership)
- (b) **transfer skills** (strategic re-negotiation by adjusting: effectiveness, efficiency, relevance to audience, design, task; in fulfilment of a rhetorical purpose)
- (c) **target text processing skills** (establishing intertextuality and situationality, creating intentionality, organising texture and structure, balancing informativity in terms of estimated impact on target text readership)

The concept shows close resemblance to earlier, traditional models of the *translation process* (for a description of these models see for example, Stolze, 1994; Klaudy, 1997; Wilss, 1996 etc.) where the steps of translation were seen (slightly simplified) as: source-text reading (perception), transfer and target-text production (writing).

The advantage of the model is that it embraces a large number of sub-processes that are needed in translation. Its disadvantage is that it is extremely complex; as a result, it is difficult to build a teaching program or an assessment scheme on it. One also has the impression that even the 'sub-sub-components' should be broken down into smaller units. E.g. *what* enables the translator to judge informativity or to establish intertextuality?

In *Weinert's classification* this model clearly belongs to the *specialized cognitive competence* group, as the authors concentrate on professional translation.

Hatim and Mason's model is a by-product of their translation theory, as a result, lack of elaboration cannot be held against them. Nevertheless, because of the success of their books and their approach, their competence concept seems to be well-known in the community of translation scholars.

2.3.2.2.2 *Radegundis Stolze's text-oriented competence concept*

The theorist Stolze (1992) published a short article about the role of linguistics in translation teaching. In the first section of her paper she clarifies her understanding of translation competence. It has two components:

- a) the *competence to comprehend* (probably the ST)
- b) and the *competence to communicate* (the „message” effectively in the TL).

She also argues that translation competence is actually the „conscious handling of texts” (387, the author's translation), which means that the two components can be refined as the comprehension of texts and the communication of the meaning of texts. In the background of these two competences there is a firm *knowledge base* that consists of *procedural* and *declarative* knowledge about language, culture and specialized areas. In addition to these types of knowledge, metacognition, specifically metalinguistic knowledge and professional experience with translation strategies influence the workings of the two basic components defined above.

The focus of the article (the role of linguistics in translation teaching) is in accordance with her statement that knowing what and knowing how in relation to language(s) are integral parts of translation competence.

Similarities of the concept to both Stansfield et al's and Hatim and Mason's model should be emphasized here. Competence to comprehend is a parallel to *ST processing skills* and has much in common with Stansfield's *accuracy* factor. Similarly, the competence to communicate can be seen as *target text processing skill* or an ability to produce appropriate target texts (Stansfield's *expression* factor). In Stolze's model, however, there are no transfer skills, and from this point of view it shows close resemblance to two-component models of the translation process (see Klaudy, 1997).

Stolze's concept, just like those of Hatim and Mason and Stansfield, has a deficiency in that it does not define exactly which skills and abilities constitute the basic components, though Stolze gives much more clues to that than the two other works.

Stolze's concept is unique in the sense that she attributes an important role to metacognition and metalinguistic skills and knowledge in her model. Metacognition serves the purpose of managing, monitoring and controlling the translation process. Besides Stolze, it is only Malakoff and Hakuta (1991) who realized that metalinguistic awareness must have a major role in translation competence - an assumption that still waits to be tested.

Stolze's concept falls into the specialized competence category, again, but because of the role of metacompetence in it, it is related to *Weinert's 9th category*, as well. However, translation is obviously not defined as a metacompetence by Stolze.

2.3.2.2.3 Hanna Risku's cognitive model of translation competence

Hanna Risku's cognitive model of translation competence is probably the most sophisticated and detailed work in the field. Cognitive science and the action theory of translation (especially Holz-Mänttari, 1984) constitute the theoretical basis of her concept. Theory is definitely the strong side of her model: Risku obviously knows much more about cognitive psychology, learning and communication theory than most translation scholars and she tries to integrate findings of these disciplines in her model. What makes the model really unique is, however, its close adherence to action theory, as a result of which it can be classified as the only '*Action competence model*' (Weinert's 7th category) in translation studies.

With the combination of cognitive science and action theory Risku managed to come up with a model that cannot be compared to any other models of translation competence. This is largely because the focus of action theory is not on the linguistic side of translation but on the social reality of the translation situation and on the translator's ability to handle this situation. It is also very important that in action theory translation is by definition an expert activity. This leads Risku to conceptualize competence as something only experts have.

Risku goes back to Lörcher (1991b) in characterizing beginners' translation processes as *sign transfer* and experts' processes as *sense construction*. She also describes in detail the factors along which novices and experts can be differentiated. These are as follows:

- The ability to create a macro-strategy for the actual translation situation
- Integrating (necessary) information
- Action planning and decision making
- The translator's self-management (reflection, flexibility, responsibility, metacognition etc.)

These categories partly integrate the skills and abilities other models include (e.g. language skills, world knowledge, research work and use of materials etc.) but they are actually more than that. They are the *processes* that organize, manage and evaluate all those skills, abilities and knowledge in the social reality of translation. What makes Risku's concept so peculiar is that she locates translation competence „above” *the usual competences*. In this sense, it could be also classified as a metacompetence in Weinert's system.

In summary, Risku really turned translation competence „upside down” and looked at it from a different point of view, which resulted in some valuable and interesting insights. It has, however, the major drawback that it is hard to see how it could serve as a base for an empirical study in its present form. Consequently, empirical validation of the model cannot be expected in the near future.

In addition, translation theory still could not even approximately answer so down-to-earth questions as the degree to which language skills, world-knowledge etc. play a role in translation competence. Risku's model does not offer a viable background for testing these

questions. We must not forget, however, that her model is built up within the framework of a completely different paradigm; as a result the research questions mentioned above are simply not relevant to it. The model may well be appropriate for answering other types of questions, but the time has not come for those questions yet.

2.3.2.2.4 Dróth's pedagogical model

In her PhD dissertation Dróth (2001a) devised an assessment scheme for formative evaluation in translation teaching. The scheme is based on a sophisticated theoretical framework, which includes a translation competence model. The model is strongly influenced by Nord, but other concepts served as a background, as well. Translation competence has nine subcomponents in the model. This large number is justified by evaluation purposes: subcomponents designate the skills and abilities that must be tested to get a comprehensive picture of how students advance with their studies. The subcomponents in the model are:

- Ability to make conscious decisions (while taking into account the translation brief)
- ST analysis
- The ability to produce coherent texts that fulfil the requirements of the translation brief
- Knowledge of genre-related TL norms and traditions
- The ability to select and use a register that conforms to the expectations set by the translation brief
- The ability to apply appropriate cohesive means
- The ability to select lexical and grammatical means in the TL that
 - Best convey the meaning of the ST
 - Conform to TL norms and traditions
- The ability to use surface elements conforming to TL norms and traditions
- The ability to evaluate the TT based on ST analysis and the translation brief

Dróth's model is unequalled in terms of elaboration and operationalizability among procedural component models. Both teaching and testing can be built on it.

As the concept was formulated to help the training of professional translators, it is categorized as a *specialized cognitive competence* model in Weinert's terms.

B) Prerequisite models

2.3.2.2.5 Christiane Nord's concept

Nord never worked out a systematic model of translation competence, but because of her impact on translation studies her statements on the nature of translation competence are highly influential. As a functionalist, Nord conceptualizes translation competence as a specialized cognitive competence in Weinert's sense. In our classification we decided to group it as a prerequisite model because of the characteristics of the majority of the subcomponents in her lists. However, we are aware that many of her constituents are procedural; as a result, the classification can be questioned. These anomalies are due to the eclectic nature of Nord's concept.

In an essay written in 1996 she lists the knowledge, skills and abilities that are necessary to translate:

ABILITIES	KNOWLEDGE	SKILLS
Analysis	Source and target language	Analyzing translation briefs
Making decisions	and culture	Text analysis in the SL
Creativity	Translation theory and	Planning strategies
Evaluation (Translation	methods	Text production in the TL
Quality Assessment)	About professional practice	Recherche

We should note here that these elements already appeared in an essay published in 1992 (Nord, 1992b) as „essential competences required of a translator”.

Nord proposes that translation competence is the *actual network* of these skills, abilities, and knowledge and the ability to coordinate them appropriately in the actual situation.

In a later section she lists the competences translation training should foster in students. However, it is not clear whether she considers all these competences as constituents of translation competence or she merely thinks about them as factors influencing translation competence. The competences included in her inventory are:

- Linguistic competence (both L1 and L2)
- World-knowledge and specialized knowledge
- Recherche competence
- Professional knowledge and skills (about translation)
- Translation competence

Here, we have to face a terminological problem, too. The name of the last competence would suggest that Nord perceives translation competence to be an autonomous competence that has some sort of relationship with the other competences. This would, however, contradict her former proposal on the abilities/skills/knowledge model, where e.g. knowledge about language is *included* in the model. The problem probably originates in the unsystematic nature of Nord’s statements. In its present form, the concept is only a collection of insightful ideas, but they by no means form a coherent model.

For a short discussion we should return to the problem of “translation competence”, because it is not clear what the term covers. If it is not an umbrella term for all the necessary competences needed to translate, then it is probably something similar to Neubert’s transfer competence (see below).

It is probably because Nord does not aim at a systematic description of translation competence that she does not explain how elements in her lists relate to each other, although she underlines the importance of the connections.

As a final remark, it can be noted that Nord’s conception shows close resemblance to the model of the PACTE group (see below) too.

2.3.2.2.6 Albrecht Neubert’s tripartite competence concept

Neubert defines translational (sic!) competence with the purpose of offering a model for the study and the teaching of translation. In doing so, he relies on translation theory and intuition. He defines translational competence as the competence that enables translators to cope with the variable tasks involved in translation (Neubert, 1992, 412). As can be seen, we have to do with a *specialized cognitive competence* (Weinert) again. The subcompetences in the model are

- (1) language competence;
- (2) subject competence;
- (3) transfer competence,

where Neubert assigns a key role to the 3rd competence as this is the subcompetence that distinguishes translation from other activities related to language and communication. He also argues that the crucial question is „how these three competences interrelate efficiently, effectively and adequately. (412)“.

Another characteristic feature of Neubert’s concept is his conviction that „translation is much more than a linguistic topic“ (413). In a later essay he even declares that „translation and interpretation are not only, or even primarily linguistic processes“ (Neubert, 1998, 5). He is not alone in translation theory with such a conception (see *Section 2.2.2. Functionalist theories in translation*), however, this is a critical issue that we know very little about and there is much debate on. We will discuss the problem of the relation of linguistic and translation competence below.

Furthermore, Neubert – running somewhat counter to contemporary conceptualizations on translation - emphasizes the importance of *translation equivalence*. According to Neubert, translation equivalence is linguistic equivalence coupled with subject equivalence and it is brought about by the translator’s transfer competence. His description of the production of translation equivalence with the terms of PDP⁶ modelling also deserves attention as this could serve as a very good starting point for further research.

Neubert’s tripartite model, though it is not worked out in full detail, is a valuable contribution since it corresponds to what common sense and experience tells us about what we do when we translate and because we can easily find justification in translation theory for his model. Another advantage of the model is that it is simple and as a result, can be used as a sound base for empirical research. From a certain aspect, we can view the concept as the forerunner of the PACTE research group’s holistic model (see below).

2.3.2.2.7 The holistic model of the PACTE research group

The PACTE research group at the University of Barcelona was formed with the explicit aim of studying translation competence systematically. Consequently, PACTE has come up with the most sophisticated competence model in translation studies that is firmly based in empirical research. The research efforts of the group focus on the structure and the nature of translation competence and on processes and characteristics of acquisition.

Translation competence is defined by them as „*the underlying system of knowledge and skills needed to be able to translate*“ (PACTE, 2000, 100). The early model of the structure of translation competence (PACTE, 2000; Beeby, 2000a) was based on cognitive psychology, language competence models and on previous studies that observed the translator’s behaviour (see PACTE, 2003 for the specific sources). The model included the following subcompetences (PACTE, 2000):

1. communicative competence in the two languages
2. extra-linguistic knowledge
3. instrumental-professional competence
4. psycho-physiological competence
5. transfer competence
6. strategic competence

After a series of exploratory tests, the model was modified at several points (PACTE, 2002, 2003, 2005). The latest model contains the following elements:

1. Bilingual sub-competence

pragmatic, socio-linguistic, textual and lexical-grammatical knowledge in each language

⁶ PDP stands for parallel distributed processing, a model of human information processing in modern cognitive science.

2. **Extra-linguistic sub-competence**

Although the term is the same as in the early model, its content has changed. In the early model, the extra-linguistic competence included translation-related knowledge, too, whereas in the present model, the latter forms an independent category (see 3. sub-competence). As a consequence, “extra-linguistic sub-competence is made up of encyclopaedic, thematic and bicultural knowledge” (PACTE, 2005, 610)

3. **Knowledge about translation sub-competence**

contains both declarative and procedural knowledge about translation as an activity and as a profession (methods and procedures, types of translation briefs, needs of clients, etc.)

4. **Instrumental sub-competence**

is composed of knowledge and skills related to the tools of the profession (documentation sources and information technologies).

5. **Strategic sub-competence**

has a central position in the model. It is a sort of *metacompetence* responsible for monitoring and coordinating the whole translation process. Therefore, it plays a role in planning the translation process, in identifying problems, in solving problems as efficiently as possible (selecting and activating appropriate strategies), compensating for deficiencies, evaluating the product and the process etc.

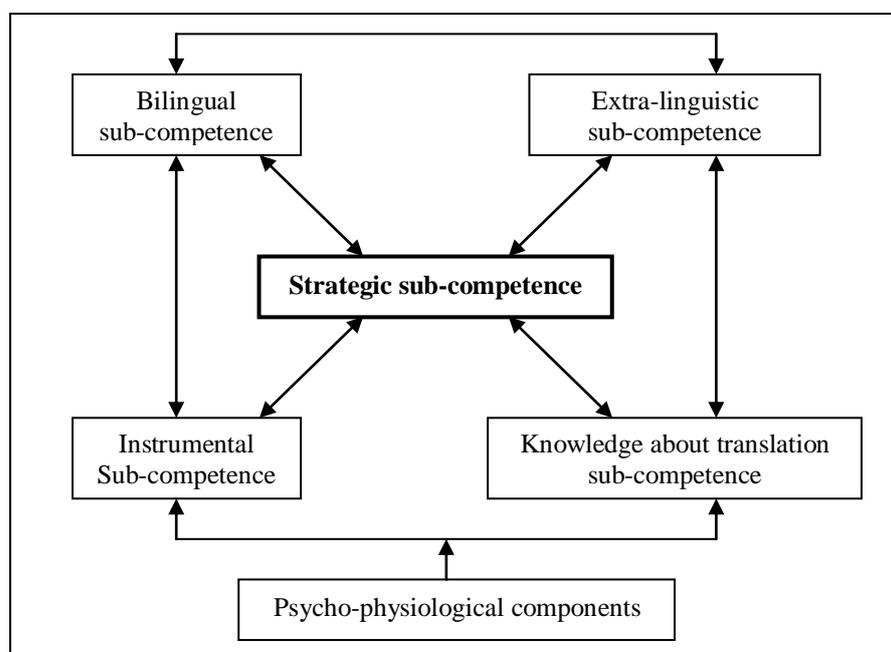
The strategic sub-competence had an important role already in the early model, but it became clearly dominant in the late model.

6. **Psycho-Physiological Component**

This is the ability to use all kinds of psychomotor, cognitive and attitudinal resources (e.g. memory, attention span or perseverance). As the label of the category suggests, the status of this element has changed in comparison to the first model. The change is warranted by the recognition that psycho-physiological elements are not unique to translation competence, but contribute to all human activity.

The model is presented in Figure 1:

Figure 1. The PACTE model. Based on PACTE, 2005, 610.



The most important modification in the model is definitely the association of transfer competence with translation competence itself. Originally, transfer competence was granted

the status of a sub-competence, equal in rank with other sub-competences. However, empirical investigations showed that transfer competence is in fact *the working of the other factors*. The issue of an independent transfer component is a sensitive one and it will be discussed below.

As for the nature of translation competence, the PACTE group maintains that

- Translation competence cannot be equated with bilingual competence
- Translation competence and performance must be distinguished
- Translation competence is expert knowledge, and consists of declarative and procedural knowledge
- Translation competence consists of sub-competences (see above).

On the basis of these proposals and the components it contains the PACTE model has the characteristics of at least three of Weinert's categories. The distinction between competence and performance is an attribute of the 3rd and 4th category (Chomskyan models), the emphasis on translation competence as an *expert* activity would classify it as a specialized cognitive concept, and strategic competence is a metacompetence in Weinert's sense. Moreover, psycho-physiological components suggest the inclusion of personality factors (e.g. persistence) in the model, which would position it in Weinert's 5th or 6th class.

Last, but not least, the PACTE group has also proposed some hypotheses concerning the acquisition of translation competence. Acquisition is assumed to be a dynamic process that advances in a cyclical fashion, rather than in a linear way. Translation competence is also thought to develop through acquiring sub-competences and through the restructuring of existing knowledge and skills. The PACTE group claims that certain factors, like the direction of translation, language combinations or specialization may have an impact on the route and rate of learning (PACTE, 2003, 84).

2.3.2.2.8 Stuart Campbell's model of L1 to L2 translation competence

Campbell's model (1991, 1998) deserves special attention for several reasons. First, it is a model based on empirical research (Campbell based his model on the study of Australian immigrants enrolling for a translation course at Macarthur University). Second, it is a special model for *translating into L2*. Most models of translation competence are based on insights from the process of translating from L2 into L1. Campbell felt the need to devise a model by investigating the translation process in the other direction. His efforts are justified by the widespread belief that translation from L1 to L2 and L2 to L1 are actually different processes (Heltai, 1996; PACTE, 2003; Hatim, 2001) though they may show resemblances.

Relying on his research data Campbell (1991) initially identified two components of translation competence:

- a) *Disposition* (attitudes and psychological qualities of the translator) and
- b) *Proficiency* (lexical coding of meaning, global target language competence and lexical transfer)

Later the model was modified as follows (Campbell, 1998):

- (a) *target language textual competence* (which can be substandard, pretextual and textual) took the place of proficiency.
- (b) *monitoring competence* (the degree of awareness of the quality of the input and the effectiveness of editing strategies) appeared as a new element.
- (c) *disposition* (refers to translator's behaviour along two dimension: risk-taking and persistence) remained intact.

Campbell predicts that the components will be largely independent of each other, although based on his subjects' performance, he claims that there is an ideal combination: a „good translator” has high textual competence, is risk-taking, but persistent.

Campbell calls his own model eclectic and admits that he neglected certain aspects which might play an important role in translation competence (e.g. world-knowledge, cohesion, use of reference materials etc.).

It should be noted that the model does not contain a separate component for 'transferring' or 'transcoding' from one language into the other. This implies, that the factors listed above are considered to be sufficient in explaining the workings of translation competence, which is in sharp contrast with several models described here (Neubert, the early PACTE, and perhaps, Pym).

Campbell claims that his model is applicable to translation into the first language, too. Further studies should be carried out to reveal similarities and differences of the two processes.

In Weinert's typology, Campbell's concept would fit into the 5th or 6th category as disposition refers to some features of the translator's personality. The inclusion of „disposition” into the model seems to be a unique feature of the model. No other concept of translation competence makes such an inclusion. This is in-line with several recent cognitive competence models, although the question arises whether it is helpful to regard disposition as an integral part of translation competence or it would be more fruitful to conceptualize it as an independent factor affecting translation competence. Further research is needed to explore the exact relations between disposition and translation competence.

One more problem arises in connection with Campbell's „disposition” factor. He defines it on the basis of subjects' use of unusual linguistic structures. It is questionable whether this is really a sign of risk-taking behaviour or of something else, e.g. verbal creativity, first language transfer or conscious and learned translator strategy/behaviour.

2.3.2.3 Translation competence as just one thing

2.3.2.3.1 The beginnings – Gideon Toury

G. Toury's (1984, 1986) early ideas on translation competence were rather diffuse compared to the detailed models in the multicomponential category. Toury, who opposed Harris's idea of natural translation, introduced the term 'native translator' as an analogy to the 'native speaker'. The native translator is, in fact, very similar to the natural translator: he/she possesses bilingual and interlingual competences, which are hypothesized to be innate. However, Toury suggests that the professional translator needs something qualitatively more, something, which became later known as “*transfer competence*”. The professional translator can be characterized by a certain form of learned and norm-governed behaviour, which is a result of socialization processes.

Toury concentrated on translation competence as expert behaviour, therefore, placing him in Weinert's specialized cognitive competences category cannot be disputed. Nevertheless, the idea of the “native translator” obviously reflects Chomskyan thoughts.

Toury is regarded as the father of minimalist conceptions by Pym (2003), hence his categorization in this group. However, if we take into account that he considers bilingual and interlingual competence to be a part of the translator's competence, then the possibility arises that his concept is, in fact, multicomponential. Nevertheless, Toury's explicit standpoint that translation competence is more than competence in two languages, may justify Pym's classification.

2.3.2.3.2. An outsider's view - Shreve's cognitive concept

Shreve (1997) used the apparatus of cognitive psychology to explain translation competence as a *specialized* cognitive competence. He proposed that translation competence is a

specialized form of communicative competence, which includes both declarative and procedural knowledge. He rejected the idea that translation competence is innate and defined translation competence as a “set of abilities that cannot have developed naturally from bilingualism” (Shreve, 1997, 125). Unfortunately, Shreve did not elaborate on what these abilities exactly could be, but went on to describe translation competence as a “set of schemata for remapping across culturally bound form-function sets”.

It is rather unfortunate that Shreve uses the terms ‘to map’, ‘mapping’, ‘remapping’ without defining them although the translators’ community is not necessarily familiar with these terms. In addition, the context implies that the terms are not always used in their conventional cognitive psychological sense either. As a result, it is not quite clear what he actually means by defining translation competence as the ability “to map mappings”. Probably mapping is used in a sense of a *mental model* of something (meaning? Form? ST? TT?), and remapping is the restructuring of the model (mapping) to fit the requirements of the target culture. In this sense, it seems justified that Shreve identifies his concept with Wilss’s (1976) supercompetence and Toury’s (1986) transfer competence.

Shreve also explores the development of translation competence and concludes that it is the restructuring of cognitive schemata that is responsible for the remappings.

2.3.2.3.3 *The climax - Anthony Pym’s minimalist definition*

In 1992 Anthony Pym published a short article which touched upon several issues in connection with the distinction between language competence and translation competence. He defined translation competence as the union of two skills:

- „the ability to generate a TT series of more than one viable term (TT1, TT2, TT3 etc.) for an ST
- the ability to select only one TT from this series, quickly and with justified confidence, and to propose this TT as a replacement of an ST for a specified purpose and reader” (Pym, 1992; 281).

With a slight modification in wording the definition is repeated in his article of 2003. Moreover, Pym suggests that the minimalist definition is superior to other definitions because the two skills he described are translation-specific in that they characterize and only characterize translation competence (and no other competence). He also argues that the minimalist definition has the advantage of isolating the „essence” of translation from such „disturbing” variables as language skills or world knowledge.

Interestingly enough, he claims that his brief definition

“hopes to say quite a lot in a very few words. It should be able to *cover the most interesting parts* of the many things that have been added *in the multicomponent models...*”. (Pym, 2003, 490)

Reading these lines one is tempted to think that the minimalist model is really a multicomponent model in a less elaborated form...

Nevertheless, Pym’s concept is, no doubt, insightful, and has the advantage of grasping the gist of translation competence. It may also be very well suited to guide translator trainers’ vision when trying to envisage the overall aims of translator training. However, neither classroom activities, nor assessment instruments or psycholinguistic research design can be based on such a competence model as it simply does not suggest *what exactly* should be fostered, assessed or investigated. As Pym (2003) himself admits, the ability to generate TT versions and to select the most appropriate one is dependent on a large number of other skills, but we never learn what these skills are.

It is not impossible that Pym intended to define a sort of a transfer competence in Toury’s sense but because of the diffuse nature of the definition we cannot be sure whether this

transfer competence is *the summation* of some skills and abilities, like in the late PACTE model, or something more than that, a qualitatively different, *independent* competence. In Weinert's sense Pym tries to create a specialized cognitive competence model, marking off the boundaries around the profession as clearly as possible.

2.3.3 Critical issues in conceptualizing translation competence – directions for further research

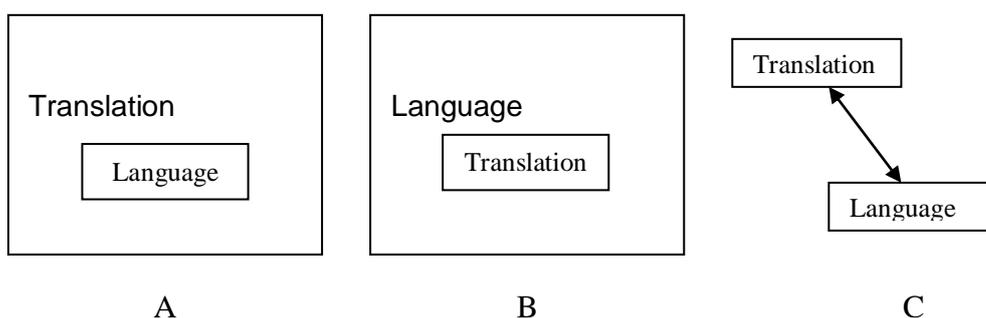
Having reviewed the competence concepts it appears that there are some recurring issues that divide scholars. In this section, we are going to highlight these questions and analyse them briefly.

The issues to be discussed are the following:

- the relationship between language competence and translation competence
- the existence of a transfer (sub)competence
- the status of natural translation and its relation to translational expertise
- the direction of translation as a factor influencing the nature of translation competence

By far the most important question is *whether translation competence is linguistic in nature* or not. Whereas there seems to be agreement on the point that translation is more than the summation of linguistic competence in two languages, models differ as to how they define the relation between translation competence and language competences. Most models consider a close link between the two, although it is not clear whether translation competence is a part of language competence or language competences are part of translation competence. Although most models presented here represent the second view, there are concepts that include translation *within* a language competence model (e.g. Bárdos, 2000; Nord, 1999). A few models (Neubert, Risku, Shreve, Toury and Pym), however insist on conceptualising translation competence as a separate competence though interplay between the two is also assumed. The three ideas can be illustrated as follows:

Figure 2 The possible relations between language and translation competence: A) language as part of translation competence; B) Translation as part of language competence; C) Two separate competences



This is a point where translation theory has obviously reached its limits: without empirical research none of the approaches can be validated.

The second issue concerns *the existence of a transfer (sub)competence*. The question is whether there is a psychic unit specialized to govern the crossing from one language to the other. Minimalist definitions usually identify translation competence with transfer competence. Most multicomponential models do not contain such a sub-competence, the exceptions are Neubert's tripartite model, the early PACTE model and perhaps Nord's

concept, although we already referred to the terminological and conceptual problem related to this (see 2.3.2.2.5 Christiane Nord's concept). The late PACTE model is unique in the sense that it declares that the summation of the sub-competences constitutes transfer competence. The other models, however, whether multicomponential or minimalist, do not specify what they exactly mean by transfer competence. However, as long as transfer competence is not operationalized in terms of observable skills, its existence cannot be tested, and the arguments for or against its existence remain nothing but speculations.

There is considerable disagreement about the status of *natural translation* and its relation to professional competence in translation studies. On the hand, it is accepted that bilinguals do indeed possess a certain ability to translate. It is also recognized that expertise is qualitatively and quantitatively different from natural translation. Most scholars are, however, preoccupied with the nature of expertise and do not address the question of the *route* from natural to professional translation competence. This is likely to cause problems, because it practically means *neglecting certain aspects of acquisition*. Shreve's concept and the PACTE model are exceptions from this viewpoint. Their efforts show in the direction of hypothesizing a link between the two competences and trying to define the exact nature of the relationship.

Although less often, but the *direction of translation* is also touched upon by the models (Campbell, and PACTE). The dilemma to be solved is *whether there are two distinct competences* for the two directions. Presumably, there are shared features and there are specific strategies used in each direction. Further research is needed with both professionals and laypersons translating back and forth to pinpoint the differences between the two types of translation, if there are any.

2.3.4 Concluding remarks

We started this section with the description of Weinert's inventory of different competence concepts in educational science and we would like to finish it with highlighting its relevance for translation studies.

As we have seen, most of the translation competence models belong to the category of "*specialized cognitive competences*". Some of them, however, carry features of the *competence-performance model*, as they put forward the existence of an *innate* translation skill/ability/competence and its automatic unfolding. Many misunderstandings and disagreements originate in the fact that scholars do not realize that they use different concepts when they employ the same term (i.e. competence).

There was only one model that could be fitted into the "*Action competence*" category, Risku's cognitive model.

Campbell's model and the PACTE model show features that allow their categorization into *subjective competence concepts*, and *motivational action tendencies*.

If we accept a definition of translation competence that involves all the skills and knowledge that contribute to the successful completion of a translation task, then non-cognitive factors should definitely be included in the models as well. This is a largely unexplored field in the study of translation competence, which may offer valuable insights into individual differences that cannot be accounted for by linguistic-, knowledge- or professional factors.

Metacompetences appear in some translation competence models. Given the complex nature of translation and findings in psychology and education science there is good reason to suppose that the concept of metacompetence is of fundamental importance in translation. However, it should be decided whether translation is itself a metacompetence, or it contains

translation-specific metacompetences, or it is affected by other metacompetences (e.g. metalinguistic skills).

As we have already referred to it, *key competences* may play a role in the functioning of translation competence. However, the development of key competences is usually not perceived to be the task of translator training, as a result, there are no direct references to them in the models, although it can be assumed that certain sub-competences (e.g. the bilingual sub-competence of the PACTE model) entail them. Nevertheless, there are trends in translator training (e.g. de Groot's (2000) componential approach) with which the fostering of key competences could easily be reconciled.

Finally, we would like to stress again that none of the models presented here is inherently better than the others. It always *depends on the aims* of the researcher or the trainer, which model suits his/her purposes best. The PACTE model, for example, is excellent for the purposes of psycholinguistic research. The individual elements, their weight and their relationship can be identified. A further advantage of the model is that it uses concepts that are accepted in psychology and education, as a result, the model and the research findings related to it can be easily compared to or associated with other psychological or educational research results. The same model, however, could hardly prove useful for e.g. formative evaluation purposes. Dróth's procedural component model offers much more relevant information for both students and professors on what students' strengths and weaknesses are. Dróth's model, however, will not tell us, what exactly enables the translator to e.g. 'select and use a register that conforms to the expectations set by the translation brief'.

As our project was psycholinguistic in nature, the holistic model of the PACTE group was accepted as a framework for our empirical research. Further advantages of the model included its sound theoretical and empirical basis, its comprehensive nature and the fact that it can be operationalized with relative ease.

Table 1 An Overview of the most important translation competence concepts

Classification	Researcher	Based on	Purpose	Relation to linguistic competence	Subcompetences (elements etc)	In Weinert's typology	Special feature
Summation of language competences	Harris	Qualitative research	Theory and research	intertwined	-	3 or 4	Emphasizing translation as an innate skill
	Stansfield	Quantitative research	Measurement and evaluation	intertwined	<ul style="list-style-type: none"> • Accuracy • expression 	2	
M u l t i c o m p o n e n t i a l procedural component Models Prerequisite models	Hatim and Mason	Theory	teaching	intertwined	<ul style="list-style-type: none"> • Source-text processing skills • Transfer skills • Target-text processing skills 	2	
	Stolze	Theory	Teaching	intertwined	<ul style="list-style-type: none"> • Competence to comprehend • Competence to communicate 	9	The role of metacognition
	Risku	Theory	?	Separate	<ul style="list-style-type: none"> • creating a macro-strategy • Integrating information • Action planning and decision making • The translator's self-management 	2 and 7	
	Dróth	theory	Teaching and testing	intertwined	<ul style="list-style-type: none"> • (several) 	2	
	Neubert	Theory	Research and teaching	Separate but related	<ul style="list-style-type: none"> • Linguistic • Subject • Transfer competence 	2	
	PACTE	Theory	Measurement and teaching	intertwined	<ul style="list-style-type: none"> • Bilingual • Extra-linguistic • Instrumental • Knowledge about translation • Strategic • Psycho-physiological 	2, 3/4, 5/6, 9	
	Campbell	Quantitative and qualitative research and theory	teaching	intertwined	<ul style="list-style-type: none"> • TL textual • Monitoring • disposition 	5 or 6	Personality traits included
Minimalist	Pym	Theory	Teaching	Separate but related	<ul style="list-style-type: none"> • Ability to generate alternative texts • Ability to select 	2	

2.4 Assessment and Evaluation in Translation

In our quantitative research we investigated the development of translation competence by means of evaluating the translation products. Consequently, it is necessary to give an overview of the literature on translation evaluation. After some general remarks, we are going to present product-oriented research on translation competence, and then assessment methods commonly applied in translation evaluation will be discussed.

2.4.1 Introduction – some general remarks on translation evaluation

The pedagogical evaluation of translations is a relatively undeveloped field within translation studies. This is evidenced both by the low number of previous publications and the nature of their contents. This can be explained by several factors.

Translation studies has long been preoccupied with evaluating the target text. Several sophisticated techniques were developed for ‘quality assessment’; the best known of which is probably House’s model (1997) (see House for an overview of earlier initiatives). These techniques are usually rooted in linguistics and they focus on the *text* rather than on the translator’s competence. In consequence, these methods cannot be used for competence assessment, which means that translation competence evaluation has no antecedents to rely on.

The nature of translation itself presents problems for potential evaluators. Translation is an open-ended task with an infinite number of “correct” and an equally infinite number of “incorrect” solutions. As a result, it can be predicted that most traditional assessment models will not work with translation.

Translation competence evaluation could have profited from language testing, however, the 20th century witnessed the gradual separation of language teaching and translation, which was urged by both parties. Consequently, advances in language testing did not effect translation evaluation. Translation studies alone, however, as a young discipline has not been able to cope with the problem of measurement and evaluation.

Nevertheless, appropriate translation evaluation techniques are (or would be) indispensable both for training institutions and the labour market. In fact, it is everyday reality for many educators, translators and recruiters. Therefore, we assume that translation evaluation is widely practiced, often on an intuitive base. The work of some authors (Waddington, 2001; Dróth, 2001a; Orozco & Albir, 2002; Zsembery, 2006) suggest that individual institutions often devise fairly elaborated assessment schemes and techniques, however psychometric properties of such instruments are usually not tested.

In the next section we are going to review initiatives in translation evaluation.

2.4.2 Research on translation competence evaluation

Previous research on translation competence evaluation can be divided into three groups. There are purely theoretical works, there are writings based on the experiences of the authors in translator training, and there is some empirical research, too.

2.4.2.1 Essays on translation competence evaluation

Theoretical works (e.g. Martinez Melis & Hurtado Albir, 2001; McAlester, 2000) concentrate on conceptual issues in evaluation, on the relationship between translation theory and translation evaluation and on problems and perspectives in designing assessment instruments.

Some authors discuss the question of evaluation as part of a more comprehensive work on translation theory or translation teaching (e.g. Nord, 1991; Hatim and Mason, 1997).

Theoretical writings are usually dominated by two issues: one of them is the question whether translation competence can be evaluated by objective, psychometric methods and the other one concerns the analysis of the present situations in translation evaluation and the directions for further action.

The question whether translation can be evaluated more or less objectively is a fundamental issue. Some translation scholars (e.g. Newmark, 1981, Sager, 1983 cited by McAlester, 2000; Risku, 1998) deny more or less explicitly that modern techniques of educational evaluation could be applied in translation evaluation. These beliefs are usually related to translation concepts that stress the complexity, the situationality, and the artistic and creative nature of the activity. The authors are certainly right in recognizing that translation competence cannot be assessed with accepted methods of e.g. language testing. However, completely rejecting the possibility of assessment or the struggle for objectivity contributes to perpetuating the embryonic state of translation evaluation.

In contrast, McAlester (2000), Martinez Melis and Hurtado Albir (2001) and Orozco and Hurtado Albir (2002) maintain that applying up-to-date techniques of educational evaluation is one of the prerequisites for translation studies to become an established field of research. This belief is shared by researchers working on empirical investigations (Stevenson, 1985; Stansfield et al., 1992; PACTE, 2000).

Another recurring theme is the theoretical foundation of further actions. Most theoreticians have realized that translators' reluctance to apply 'objective' techniques in assessment is partly due to their lack of acquaintance with such techniques and with notions of educational evaluation in general. As a result, most authors (Hatim and Mason, 1997; MacAlester, 2000; Martinez Melis and Hurtado Albir, 2001) try to orient their readers' attention to factors like the aim and context of evaluation and incorporate ideas like summative, formative and diagnostic evaluation into translation studies. Martinez Melis and Hurtado Albir (2001) prepared an inventory of 'what to do' in translation competence evaluation. Its brief outline is as follows:

We therefore consider it necessary:

- 1) To research the current situation of assessment in translation teaching: to catalogue the existing bibliography, develop a database on current assessment practices in curricula translator training centres (tests, assessment criteria, programs, etc.), carry out surveys with teachers and students in orders to know their views on assessment.
- 2) To develop assessment procedures and instruments for each of the three functions by means of empirical experimental research, after a preliminary definition of competencies, objectives and progression. (Martinez Melis & Hurtado Albir, 2001, 285)

The citation clearly attests that translation competence evaluation is just starting to take shape, and the research efforts we meet recently (and the ones we are going to describe in the following sections) are only the first attempts in a relatively neglected field.

2.4.2.2 Experiences from translator training

Publications describing assessment instruments and scoring methods applied in translator training were included in this group (Farahzad, 1992; Klaudy, 1996; Beeby, 2000b; Adab, 2000; Orozco, 2000). The significance of these studies lies in the fact that they can serve as a basis for further research: instruments and methods described by them could be tested statistically. To a certain extent, they correspond to what Martinez Melis and Hurtado Albir described above as “researching the current situation of assessment in translation teaching”. An overview of the accounts of assessment methods in translator training is presented in Table 2 and they will be described in detail in *Section 2.4.3*. Here we only engage in a brief critical analysis of the articles.

Table 2 An overview of assessment methods in translator training

	Aims	Direction of translation	Type of tasks	Scoring methods	Relevant research results
Farahzad (1992)	Assessing students in translation training	Unknown	Open and closed tasks	<ul style="list-style-type: none"> • Holistic • Quantitative error analysis 	No data
Klaudy (1996)	Assessing students in translation training	L2→L1	Open tasks	The teacher as ‘reviser’ (time needed for re-vision = criterion)	No data
Adab (2000)	Assessing students in translation training	L2→L1	Open tasks and translators’ notes	Holistic and quantitative (combined)	No data
Beeby (2000b)	Comparing performance of trained and untrained translators	L1→L2	Open tasks with pre-defined translation problems	Quantitative: Scoring the solution of pre-defined translation problems	Trained translators performed better.
Orozco (2000)	Assessing the development of translation competence	L2→L1	Open tasks and questionnaire	Quantitative: error analysis	In progress
Dróth (2001)	Formative assessment of students in translation training	L2→L1	Open tasks	Error analysis: Formative evaluation system	Complex
Zsembery (2006)	Assessing students in translation training	L2→L1	Open tasks	Computer assisted error analysis	Subjectivity reduced / in progress

A characteristic of these studies is that they only portray assessment methods. Outcomes are usually not presented or analyzed, or if so, results are put forward in the form of raw test scores, final grades or group means, at best. Although authors mention that they take into account the aims of the course and the translation problems and strategies covered in the course when designing and selecting assessment methods, more often than not, theoretical considerations and the details of planning evaluation are not discussed, as a result, it is very difficult to evaluate these initiatives.

2.4.2.3 Empirical research

Reviewing the literature we could only find three research reports on translation competence evaluation that more or less met the requirements of modern scientific research. A comparative analysis of these studies cannot be performed as they diverged both in their aims and in their (often unexposed) theoretical background. Consequently, we will only describe these investigations one by one and point to their virtues and weaknesses.

The primary objective of *Stansfield and his colleagues'* (1992) study was to identify the constituents of translation competence, or as they called it, translation ability and to provide 'translation skill level descriptors'. Furthermore, they tried to discover how translation abilities related to other language skills. In order to reach these aims, they had to devise an instrument for assessing translation ability. Their sample consisted of 58 adults, most of whom were employed at the FBI at the time of the study. Both language specialists, translators and other FBI personnel were included in the sample. The major findings of the study are the following:

- Their measurement instrument proved reliable and valid.
- Two dimensions of performance were distinguished: *Accuracy* (correct transfer of content) and *Expression* (linguistic features of the TT).
- As a tendency, it could be observed that subjects usually performed better on the *accuracy* scale in L1→L2 translation, and on the *expression* scale in L2→L1 translation.
- Skill level descriptors were provided for both dimension (5 levels each)
- There was some evidence that accuracy is a more valid measure of translation ability than expression.
- Several significant correlations were found between language skills (both SL and TL) and translation performance.

The study is unparalleled in translation competence evaluation in the sense that the researchers used modern psychometric methods to validate their measurement instruments and to analyze their results.

However, on closer observation of the research design, some serious flaws can be detected. Stansfield and his colleagues did not review the literature on theory claiming that such literature was practically non-existent or irrelevant for the purposes of their study. This might have been true for concepts of translation competence at the beginning of the 1990s. However, translation theory, which was already flourishing at that time, was disregarded. In consequence, the authors failed to define concepts like translation or translation ability. The lack of theoretical background is a major shortcoming of their research, which has led to problems of validity. Items like word- and sentence-translation and syntactic error detection are included in their tests. These types of tasks are often utilized in assessing language skill, too. As a result, the question arises what these items actually assess: language skills or translation competence?

It seems as if Stansfield and his colleagues decided intuitively, without relying on translation theory that the unit of translation is the word or the sentence. Although paragraph translation was included in the assessment procedure, complete texts were not given to their subjects to translate. This runs counter to text-oriented and functionalist approaches to translation, which already belonged to the dominant orientations in the nineties. It is possible that Stansfield et al. took a different position on the nature of translation, but then, their position should have been explained and supported with arguments.

In summary, in spite of its theoretical shortcomings, Stansfield et al.'s contribution is a pioneering work in translation studies. Both its perspective, that is, the idea that translation competence can be measured and studied by psychometric methods, and its techniques can serve as a base for further research.

In two projects, *Malakoff and Hakuta* (1991) investigated bilingual children's translation competence. They accepted Harris's notion of natural translation competence. As a result, their research markedly differs from the other empirical studies on translation. The subjects (n=16 and n=52) in their investigations had never had any formal training in translation, moreover, a subgroup did not even have considerable experiences in translation. Furthermore they did not differentiate between oral and written translation. Although Malakoff and

Hakuta's explicit research purpose was to explore the relations between translation competence and metalinguistic skills, their research results reveal nothing about this. Their most important findings are as follows:

- Children were good translators; as a result, the idea of Harris's natural translation gained some support.
- For words, translation speed was better predicted by TL proficiency than by SL proficiency. The pattern was less clear for sentence translation.
- Hierarchical regression brought some evidence that there is a distinct 'translation proficiency', which is independent of the two language proficiencies and that predicts translation speed.
- Translation is a widespread skill among bilinguals.

From a methodological point of view Malakoff and Hakuta's research is less sophisticated than the previous one: reliability and validity of their instruments were not checked; they failed to distinguish between oral and written modes of translation; and they, too, had their subjects translate isolated words. The merits of the research lie mainly in the fact that they raise several interesting issues: bilingualism and translation, natural translation, children's translation competence, the isolation of a distinctive psychic component that is responsible for translation and the relationship between translation competence and metalinguistic skills are all unresolved issues that are still open to debate.

Yet another type of research was carried out by *Waddington* (2001), who attempted to determine the validity and reliability of evaluation methods applied in translation teaching. University students (n=64) participating in his research had to translate a text from L1 to L2. Although his hypothesis was that "methods of assessment based on error analysis are more reliable and valid than holistic methods"⁷ (Waddington, 2001, 315), his findings did not support the hypothesis: the techniques studies did not differ in terms of validity.

Waddington also collected data on some external factors (e.g. language competence, teacher's assessment, self-assessment, etc.) and performed a factor analysis to determine the underlying structure of translation competence. He could identify four factors, the most important being *translation competence* itself. It consisted of a) linguistic ability, b) the ability to translate into and from the studied languages and c) the ability to translate in other language combinations. The three other factors influencing achievement were *students' self-assessment of their translation competence*, *L1 language competence* and, somewhat surprisingly, *mathematical intelligence*. The four scoring methods investigated in his study all showed significant correlations with the first three factors (mathematical intelligence was not included in further analysis.)

It should not be forgotten that Waddington examined translation from L1 to L2; as a result, his findings cannot be expected to apply to L2→L1 translations automatically. However, the research questions, the methods and the design are remarkable: a similar study in the reverse translation direction would be indispensable.

2.4.3 Assessment methods applied in translation competence evaluation

Based on the existing literature, in this section we will give an account of

- the types of tasks applied in translation evaluation
- the scoring methods used in evaluation
- and some unorthodox evaluation techniques.

⁷ Evaluation based on subjective impression.

2.4.3.1 Task types in translation evaluation

There are two types of tasks commonly used in educational testing: *closed tasks* have one or more (but finite number of) correct solutions. Correct answers can be foretold with complete certainty, and it can always be defined unmistakably whether a solution is correct or not.

Open-ended tasks can be characterized as having an indefinite number of correct solutions. Moreover, judgments concerning the correctness of solutions cannot be made unambiguously. The use of closed and open tasks in translation evaluation is described in detail in this section.

2.4.3.2 Closed items in translation evaluation

Although closed items by definition, cannot be reconciled with the nature of translation as defined by certain theories (e.g. functionalist theories, see an explanation below), they were used in half of the investigations reviewed here. Similarly, Waddington (2001) found in his survey that about half of the professors at the 20 institutions participating in his study applied closed items as complementary means of collecting data on students' translation competence. In the following, first we are going to catalogue the forms closed items may take in translation evaluation then we shall engage in their critical analysis. Whenever it is possible, examples will be brought to illustrate the type of task in question.

2.4.3.2.1 Types of closed tasks in translation evaluation

1. Selecting the best TT segment of several possible solutions for a word or phrase underlined in a sentence (Stansfield et al, 1992)

Example: *Dicen que mañana va a llover.* (A) to snow (B) to cry (C) to rain (D) to call

direction of translation: L2→L1 (Spanish→English); correct solution: C
(Stansfield et al, 1992, 466)

2. A SL sentence is followed by a possible rendering. The TL sentence contains a lexical, a syntactic or a spelling mistake. The mistake(s) must be detected and corrected (Farahzad, 1992). A version of this task is offered by Stansfield et al. (1992) who only presented their subjects with the flawed TL sentence that had to be corrected.

Example:

Instructions: Blacken the space corresponding to the letter of the incorrect part of the sentence on your answer sheet. If there is no error, choose (D). There cannot be more than one error in each sentence. [...]

You shouldn't forget to call her tomorrow.

A B C D

The correct choice is A.

(Stansfield et al, 1992, 466)

3. A SL sentence is followed by two possible translations: the students must choose the better version (Farahzad, 1992).
4. A ST of 100-150 words is followed by its TL version. The TT contains several errors, which must be identified and corrected by the students. The number of errors is given to avoid students rewriting the whole text (Farahzad, 1992).
5. A ST is followed by two possible TL renderings: the students have to decide which one is better and why (Farahzad, 1992).
6. Students must decide whether certain segments in a text that they have translated are translation problems or not (Orozco, 2000; Orozco and Albir, 2002)
7. Translating isolated words (Farahzad, 1992; Malakoff and Hakuta, 1991) and defining words (Farahzad, 1992).

The categorization of the last item (translating and defining words) is not unambiguous, as in real communicative situations even a translation of a single word can be an open-ended task as solutions are context dependent and cannot be pre-defined because of the creative nature of the process. However, the tasks mentioned here refer to translating words out of any communicative context. This fact narrows down the range of possible answers to some conventional one-to-one correspondences.

2.4.3.3 The critique of closed items

The advantages of closed tasks, which often take the form of multiple-choice tests, are obvious. Scoring is simple, they make the impression of being objective as opposed to open tasks and they lend themselves easily to statistical analysis.

It is, however, similarly easy to recognize that this technique has serious disadvantages when applied in translation evaluation: creativity, a central element in the translation process is artificially excluded from these tasks. As already mentioned, translation is normally an open-ended task with several possible solutions. In case of closed items, *only one* possible solution is presented with several unacceptable ones. This may give the impression for students that there *is one* correct solution. Moreover, Farahzad (1992) mentions that Arabic students often refrain from choosing between the given options and write their own TL versions next to the test item. In this case, they probably follow their ‘natural instinct’, and try to look for another, perhaps better solution. In such cases, however, the item cannot be evaluated and the advantages of the closed task are obviously lost.

Nevertheless, it is only Farahzad, who mentions this problem in relation to closed techniques. Further investigations are needed to discover whether it is the nature of translation itself that provokes the examinee to look for solutions other than provided or other factors (e.g. cultural differences, students’ lack of experience with multiple-choice testing) can be accounted for the phenomena observed by Farahzad.

It must be noted that discrete point testing methods by definition cannot be reconciled with certain translation theories. According to Pym (1992), for example, the most significant difference between the language learner and the professional translator is that the language learners’ errors are binary (the solution is either correct or not), whereas the translator’s errors are non-binary (a solution is good, the other one is better, and the third one is worse). In other words, if there is a binary error in a translation – and this is exactly what closed items detect-, then the error is related to *language competence* rather than to translation competence.

Closed tasks are also difficult to reconcile with functionalist and text-oriented translation theories. In this case, it is the unit of translation that causes problems. More often than not, multiple-choice test items assess the translation of words, phrases and sentences. In addition, these segments are often decontextualized. However, if we accept an approach to translation that equivalence or adequacy exist only on *text-level*, then the translation of smaller, isolated segments cannot offer any sensible information on *translation*. Similarly, the translation of decontextualized words and sentences cannot offer any information on the subject’s competence to produce a TT that fulfils a certain function in the target culture. Problems of validity become apparent in these instances: closed tasks simply do not assess translation *as defined* by these theories. The validity of the tasks is threatened by the fact, too, that certain types of tasks (e.g. defining words or syntactic error correction) are applied in foreign language testing as well. One cannot avoid asking *what* is actually measured by these tasks. *Translation competence* or, for instance, the ability to apply *L2 syntactic knowledge*?

2.4.3.4 The benefits of using closed tasks in translation competence evaluation

No matter how strange it may seem first for translators and translation scholars to use closed items in translation competence testing there are some arguments that can be brought up in support of the well thought-out application of these tasks.

1. In formal learning, recognition as an element of declarative knowledge precedes application (procedural knowledge) (Wilss, 1996). Traditional open tasks in translation, that is translating a text or part of it can assess only a relatively high level of procedural knowledge. In case of multiple-choice items, it is recognition that has to be activated to solve the task, which makes the assignment easier. As a result, applying closed items parallel to open-ended tasks may contribute to obtaining a more detailed picture of the development of students' translation competence, particularly in the case of beginners. Consequently, closed items can probably be applied most efficiently in diagnostic and formative testing.
2. Closed items enable focusing on a single translation problem or on a sub-competence responsible for solving a translation problem. An item measures only a single sub-competence. This may have at least two advantages:
 - Translation is a complex activity. It is often very difficult to categorize translation errors in authentic texts as a result, it is often not clear what deficits an error hides. Well-designed closed tasks by-pass this problem by deliberately focusing on certain sub-competencies.
 - Closed items offer possibilities of assessing how students handle translation problems that do not occur in the parallel open-task. One text can definitely not contain all types of translation problems. Consequently, closed items designed to assess the management of certain translation problems may prove useful in complementing open tasks.

The reluctance to use closed tasks in translation competence evaluation is probably rooted in the same belief as the mistrust against the 'complex-skill approach' in translator training. De Groot (2000) claims that translation competence being perceived as a complex skill, is traditionally fostered by means of complex tasks, that is, via translating texts. Traditional training approaches oppose developing sub-competencies independently, because – as they argue – the 'whole' is more than just the sum of the parts, consequently fostering sub-competencies may not necessarily result in the growth of the 'whole'. The same line of thinking can be found in relation to the application of closed tasks in translation assessment. They are supposed to be measuring only the 'parts'. Because of the dearth of empirical research, however, the accuracy of such claims cannot be determined. Nevertheless, it is worth considering the following analogy: a football-player's speed at short distances says nothing about how well he can play football. But it can turn into very useful information when interpreted together with several other data on the same footballer.

Hatim and Mason (1997) also warn against rejecting closed tasks without giving due consideration to their strength and weaknesses. We agree with them that a carefully devised closed 'test' could play an important complementary role to translating whole texts in providing additional information on the development of translation competence. An obvious benefit is its efficiency, as a large number of sub-competencies can be covered with relatively small investment in time and energy. These tasks, however, need to be prepared with extreme caution in order to assure validity. Ideally, problems that form the basis of closed tasks must be identified in a complete SL text and in its complete TL translation. Designing and verifying such a test can be a meticulous task. In consequence, although the *application* of closed items is simple and economical, their construction is so time- and energy-consuming that it may undermine its parsimony. Moreover, the reliability of the tests designed this way

and their correlation with performance on open tasks must be confirmed, too. Only when these requirements are fulfilled, can we further examine their applicability.

2.4.3.5 Open tasks in translation evaluation

Open tasks require students to find the correct solution(s) on their own. Whereas open tasks fit the complex nature of translation, the scoring of these tasks is much more problematic than that of closed tasks. In other words, open tasks assure validity more readily, but they endanger reliability. These issues will be discussed in detail below, but first we give an account of open tasks in translation evaluation:

1. Translating words and phrases in context (Stansfield, 1992)
2. Translating sentences (Stansfield, 1992; Farahzad, 1992 – sentences presented in context; Malakoff and Hakuta, 1991 – oral translation)
3. Translating paragraphs (Stansfield, 1992 – it is not clear whether the paragraphs were whole texts or not)
4. Translating texts (Farahzad, 1992, Malakoff and Hakuta, 1991, Waddington, 2001, etc.) Most open tasks belong to this category.

The classification of the first group (translating words in context) is just as problematic as that of the last group in the closed items category. This time, however, the translation of words is contextualized, which permits a greater variety of solutions. Our decision is supported by the flexibility Stansford et al. (1992) showed in scoring: there was not only one correct solution but any responses could be accepted that were felt appropriate by the rater. Similar principles governed the scoring of sentences and paragraphs in the study. As a result, translating words was classified as open task although their validity can be questioned again.

There are two methodological problems related to open tasks. One of them concerns text selection, while the other one is the issue of scoring the TL outcome.

2.4.3.6 Text selection in translation competence evaluation

Text selection is probably one of the greatest challenges facing translation teaching and – evaluation. It is primarily the great number of criteria relevant to selection that cause problems. Criteria are also unstable in the sense that they change depending on whether selection affects teaching or evaluation and on the actual objectives of teaching or functions of evaluation. The problem of text selection is so complex that it would be worth devoting a complete dissertation to it, but the scope of our work permits only the discussion of the most important issues.

On the basis of the existing literature, it looks as if translation teaching is more concerned about text selection than translation evaluation. Nevertheless, text selection in translation evaluation corresponds to ‘test construction’ in educational testing, as a result, careful planning, probing and analysis would be vital for the success of individual projects.

Although the weight of certain factors may vary, it can be assumed that more or less similar criteria are applied in translation teaching and in evaluation. Therefore, it seems justified to review and summarize text selection criteria applied both in translation teaching and evaluation. After an overview of the literature (Klein-Braley and Smith, 1985; Nord, 1991; Kelly, 2000; Hatim, 2001), the following criteria emerged as relevant in translation evaluation:

- **Linguistic features** of the text: the most prominent linguistic factors are *text-level* criteria as they determine the management of lower level (e.g. syntactic, lexical) problems. However, texts belonging to the same type or genre may differ in relation to *lexical or syntactic difficulty*. Therefore, these characteristics of the texts cannot be neglected either. The fact that the linguistic difficulty of a text cannot be measured objectively gives rise to

problems. As a result, it is usually the intuition of the instructor that forms the basis of text selection.

- **Completeness:** Whenever possible complete texts must be selected for translation. This factor is closely related to the previous one. If a translator has to translate a segment only, he/she cannot create an all-inclusive, unimpaired representation of the text and its function. Consequently, he/she may miss vital information, which, in turn, leads to damaging the quality of his/her work. In addition, it is very difficult to give a realistic translation brief to a text segment (see below the requirement for contextualization).
- **Cultural characteristics of the texts** refer to the amount of knowledge necessary to mediate successfully between the two cultures.
- **Contextualization:** the ST must be accompanied by a realistic translation brief. Therefore, text-types that are typically not translated in everyday practice (e.g. editorials) should be avoided as they do not offer valid information on translation competence.
- **The length of the texts** is a completely practical criterion. Neither teaching, nor evaluation permits the translation of long texts. Time and energy that must be devoted to scoring limit the length of the texts.

Taking into consideration the competence model of the PACTE group, which we accepted as a background for our study, further factors arise that may influence text selection:

- **The amount of knowledge necessary** to translate the text (both world-knowledge and specialized knowledge)
- **Professional skills and knowledge required** to complete the task (using reference materials, translation memory etc.)

Obviously, it is very difficult, if not impossible to control all the criteria listed above. Text selection becomes even more problematic if we consider that several factors cannot be clearly defined or quantified (e.g. linguistic, cultural and knowledge factors). A serious problem is posed by the lack of an agreed-on text-typology already referred to in *Section 2.2.1.2*. A short excursion to text-typology

As most factors of texts selection are undifferentiated, it is usually done intuitively. We have no reason to suppose that experts' intuitions are not correct, but we do miss systematic descriptions and justifications of their choices.

Finally, let's turn to the question why the unstructured nature of text selection criteria poses problems for competence evaluation.

2.4.3.7 Evaluation and text selection

Text selection criteria may vary in accordance with the function of evaluation.

In formative evaluation, text selection appears less problematic than is summative evaluation, but in reality, the problem only shifts back to the level of curriculum design, that is, to text selection for teaching. In evaluation, the problem takes the form of selecting texts that represent text types and translation problems covered in the assessed period of teaching.

In summative evaluation, a relatively large field of knowledge and skills should be covered with a text/test of moderate length. As a result, text selection is more problematic in this case. It is, of course, impossible to include all types of texts or problems in an exam. In consequence, there is a need for choosing a text, the translation of which offers the most appropriate picture of translation competence. The success or failure of translating the text should also predict performance on other text-types. Because of a lack of empirical research, however, we do not know anything about how text-specific sub-competencies relate to each other, as a result, it is not clear, for example, how success in translating a general text predicts success in specialized texts or whether translators successful in translating informative texts

do also well in translating expressive texts or not. Laukkanen's research (Tirkkonen-Condit and Laukkanen, 1996) suggests that non-routine texts may have a negative influence on professionals' achievement. She, however, had only one subject in her study; as a result, far-reaching consequences cannot be drawn from her research.

Inappropriate text selection may have serious consequences. In norm-referenced evaluation, too easy or too difficult texts cannot differentiate between the subjects: translators with different degrees of proficiency will be equally successful or will equally fail the task. Failure to differentiate between more and less competent (would-be) translators can have adverse effects in entrance exams and in other selection procedures, in national or institutional surveys, and in research, too.

The evaluation of natural translation competence deserves special attention. As translation studies as a discipline has been long preoccupied with providing evidence that translation is a profession, it neglected the evaluation of non-professionals' (language learners', bilinguals') translation competence. A positive outcome of this preoccupation is that it is accepted by now that there is translational expertise, or to use Nagy's (2000) terminology, a type of specialized, professional competence. Many translation scholars, however, seem to ignore the fact, that specialized competencies are based on general competencies. The assumption that laypersons have no translation competence at all, has led to choosing difficult texts (intuitively) that are overloaded with translation problems. These types of texts may differentiate well between professionals and may prove that being bilingual cannot guarantee success in translation. However, they do not show the enormous differences there can be between naïve translators and they do not shed light on what components of translation competence they have already acquired. This last point leads us to diagnostic evaluation.

The aim of diagnostic testing is to gather information on students' learning needs, that is, to find out what they already know and what they do not know. In consequence, a text should be chosen that covers the whole spectrum of translation competence. This is, of course, impossible. Other abilities and competencies are also usually assessed by test series. A similar strategy would mean compiling text-series for diagnostic evaluation in translation teaching. This, again, however, cannot be accomplished until we have a more systematic knowledge of texts in relation to translation.

2.4.3.7.1 Text selection in empirical research

The issue of text selection is seldom dealt with in empirical studies: most researchers ignore or avoid the problem. Farahzad (1992) stresses that students should be given complete texts to translate. Stansfield and his colleagues (1992) had only FBI personnel in their sample, which justified their decision to use only specialized texts (legal, criminal etc.) in the study. This, however, sets limits to the generalizability of their results. Malakoff and Hakuta (1991) evaluated children's translation competence, which resulted in very specific choices again. Unfortunately, the authors only reveal that their subjects had to translate a story. Other information is not given about the text; as a result, the level of task difficulty is unknown.

No matter, how problematic text selection is, it does not justify current practice in empirical research, which can be characterized by not presenting text-selection procedures in full detail, not discussing certain considerations, not classifying texts in any typology and not making references to how text selection effects the interpretation of the results. The evaluation of text production (writing skills) and process-oriented translation research faces similar challenges, but handles the problem with a more conscious attitude (e.g. Kádárné, 1990; Molnár, 2000, 2003 and Krings, 1986b, Lörscher, 1991b, Jääskeläinen, 1999).

2.4.3.7.2 Conclusions on text selection in evaluation

Because of the large number and the multifaceted nature of the criteria, text selection procedures can never become objective and instrumental. Empirical research, however, could help a lot in revealing the weight of each criterion in different translation situations.

There is also a need to pay more attention to problems of text selection, especially in empirical research. Otherwise, the interpretation of research results becomes debatable.

2.4.3.8 Evaluating and scoring the target text

A widely discussed problem in translation evaluation is the lack of sophisticated and verified, objective evaluation criteria (Hatim and Mason, 1997, Klein-Braley and Smith, 1985, Martinez Melis and Hurtado Albir, 2001). Nevertheless, there are some initiatives that can form the basis of further research and systematic innovation. In this section, methods used for the evaluation of target texts in open translation tasks will be reviewed.

In general, two types of evaluation can be distinguished:

1. *Holistic evaluation*: a judge or more judges rate the target text on a numeric scale (1 to 5 or 1 to 10 etc.) according to several criteria. The number of criteria is usually between three to six, and they may include factors like overall impression, accuracy, expression, grammatical correctness, spelling etc. (Stansfield et al, 1992, Farahzad, 1992, Waddington, 2001). The judgment is based on subjective impressions.
2. *Analytic evaluation* involves error analysis and positive evaluation. Error analysis is the more prevalent form of analytic evaluation, the notion of positive evaluation emerged only in the 1990s (MacAlester, 2000; Beeby, 2000b). The both methods will be described in detail below.

2.4.3.9 The notion of translation error and some typologies of errors

Whereas the major objection against holistic evaluation is that it is not objective enough (Farahzad, 1992), analytic evaluation struggles with the problem of translation error. Translation errors are closely related to translation problems, on the one hand, and to translational norms, on the other hand, each an independent research direction within translation studies (see e.g. Nord, 1991, Lörcher, 1991b and Jääskeläinen, 1999 on translation problems and Schäffner, 1999, Toury, 1995, Heltai, 2004, 2005 on translational norms).

Error analysis involves detecting and scoring each translation error in a text. However, there is a lack of agreement among scholars as to what constitutes a translation error and how it should be weighed. The two extremes are probably represented by Pym (1992) and by Gouadec, 1981 cited by Hatim and Mason, 1997). Pym simply defines translation error as a non-binary error, whereas Gouadec defines 675 types of errors and their weight, and all this, without taking semiotic and pragmatic aspects into consideration. Between the two there are approaches like Kupsch-Losereit's (1985), Sager's (1983) or Hurtado's (Martinez Melis and Hurtado Albir, 2001).

According to *Kupsch-Losereit* (1985) "a translation error [is] an offence against:

1. the function of the translation
2. the coherence of the text
3. the text type or text form
4. linguistic conventions
5. culture- and situation-specific conventions and conditions
6. the language system" (Kupsch-Losereit, 1985, 172).

Furthermore, she proposes that errors should be summed and weighed. However, nothing is said about how scores calculated this way could be interpreted. Neither is it known whether her system was tested in practice or not.

Sager (1983) distinguishes between five types of errors:

1. inversion of meaning
2. omission
3. addition
4. deviation
5. modification

These phenomena, however, can only be regarded errors if they are not justified by the translation brief (or as Sager call it, the “specification”). Sager proposes the use of an assessment grid, in which errors make up only one dimension of the matrix. The other dimension concerns the type of the effect the error has on the text. Therefore, distortions may emerge in the linguistic, semantic and pragmatic level.

Martinez Melis and Hurtado Albir (2001) propose that several distinctions should be made between errors:

1. Errors can be related to the ST or the TT
2. There are functional (transgression of the functions determined by the translation brief) and absolute (independent of the translation task) errors
3. Systematic (recurrent) and random (isolated) errors must be differentiated.
4. Product-related and process-related errors can be distinguished.

Furthermore, they are of the opinion that the gravity of the error cannot be determined by its nature alone. Several factors must be considered when assessing the significance of an error.

In an earlier work, Hurtado (1995 cited by Waddington, 2001) proposed a more detailed typology:

1. ST related errors: contresens, faux sense, nonsense, addition, omission, unresolved extralinguistic references, loss of meaning, inappropriate linguistic variation (register, style etc.)
2. TT related errors: spelling, grammar, lexical items, text and style.
3. errors related to the transmission of the main or the secondary functions of the ST.

(based on Waddington, 2001)

Heltai (2004, 2005) distinguishes between errors related to *information transfer* and errors related to the *formation of the TT*. The latter is further divided into performance-, competence- and interference errors. It should be noted that this last typology is related to the origins of the errors, which are extremely important in translation training, and which are, however, equally difficult to identify on the basis of the TT. Furthermore, Heltai proposes that both information- and formation related errors can be *overt* or *covert* errors.

Zsembery (2006a, 2006b) is currently working on a project in computer assisted translation evaluation. Her system includes three broad error categories: linguistic, formal and other types of errors:

Linguistic

- recurrent grammar error
- grammar error
- severe grammar error
- recurrent lexical error
- lexical error
- severe lexical error
- errors in punctuation
- syntactic error
- severe syntactic error

Formal

- spelling
- missing phrase
- missing part of sentence
- missing sentence
- nonsense
- word order errors
- errors in text layout

Other

As can be seen, there is a relative wealth of error-typologies and probably, there are many more in use in different institutions that have never been publicized. However, we know hardly anything about how these systems work in practice. Only two studies (Dróth, 2001a, 2001b; Waddington, 2001) were found that investigated and analyzed evaluation and scoring methods systematically.

In his study, Waddington (2001) tried to find out which one of the scoring methods applied most frequently excels the other in terms of validity and reliability. He conducted a survey at 20 European and Canadian Universities, in which 50 instructors in translation training was asked about their scoring methods. On the basis of these data, Waddington identified four approaches to scoring. These were as follows:

- A. Error analysis based on Hurtado's (1995) categories. Errors are weighed, good solutions are awarded extra points.
- B. Error analysis taking account the negative effect of errors on the overall quality of translations.
- C. Holistic method, which included scoring on a 1-10 scale. Descriptors were given for two dimensions: accuracy of transfer and quality of expression.
- D. A combination of method B and C.

Waddington's results were already presented in *Section 2.4.2.3* in detail. Here, we would only like to repeat that neither method proved more valid than the other ones.

If we turn to other empirical research efforts presented in *Section 2.4.2.3*, we find that they can be equally well grouped according to Waddington's categories. Stansfield et al's (1992) evaluation is holistic, whereas Malakoff and Hakuta's (1991) method belongs to the quantitative category as they pursued error analysis. Farahzad (1992) used a combined method.

In her PhD dissertation, Dróth (2001a) compared the evaluation system of four Hungarian institutions (SZIE translator training centre, ELTE ITK, ELTE BTK translator training centre, BGME language institute, translator training specialization). Three translations (target texts) were evaluated with each method, and the outcome is fairly thought provoking: although the number of translations is very small, as Dróth was more concerned about qualitative analysis, it is astonishing that two translations failed one system, while they earned a 4 (on a 5 point scale) in another system. This research result sheds light on the problems of evaluation and on its obvious dangers. Dróth (2001b) also criticized training institutes and translation agencies for not being systematic enough in setting up their criteria and for a lack of conscious decision-making in assigning texts for assessment purposes. To provide a model for the systematic preparation of an evaluation scheme, she devised a formative evaluation system for translator training. The criteria are the following:

1. Communicative situation

Coherence, cultural, social, professional, pragmatical background knowledge

2. Textual level

2.1 Decisions: rhetorical purpose, genre, register – language for specific purposes

2.2 Cohesion

2.3 Logical and thematic order of the clauses and the parts of the sentence.

3. Syntactics

Reception, analysis and transfer of grammatical phenomena

4. Lexis

Reception, analysis and transfer of meaning of words and expressions – terminology

5. Surface features

Spelling, punctuation, word-processing

(Dróth, 2001b, 66)

The evaluation system was implemented in translator training, but Dróth did not offer a full overview of its functioning. Students' responses were very positive on the system: it proved to be useful in providing feedback and assisting learning. However, no statistical analyses were carried out to reveal the validity and the reliability of the scheme when applied in measurement.

2.4.3.10 Positive evaluation in translation

Ch. Nord is not only accredited with a definition and classification of translation problems, but she was the first to suggest the positive evaluation of translations (Nord, 1991), though she herself never used the term. According to Nord, students in translation courses (which includes language learners, too!) could be evaluated with the following method: a certain number and type of translation problems are selected, and then only the solution of these problems must be evaluated in a translation.

From the point of view of evaluation theory, the idea of positive evaluation has several advantages as opposed to error counting with its negative orientation. The problem list attached to the text can function as a test, the individual problems behave as items on a test, and they can be scored on a 1-0 scale (problem solved – not solved). Test results could be given in raw numbers or in percentage points, as well.

We are of the opinion, however, that no matter, how exactly a translation problem is defined, judgments about the success of its solution will always remain subjective, particularly in the case of complex problems. To apply the technique effectively, a method would be needed to predict translation problems in a text with great certainty. Nevertheless, as we have already referred to it in *Section 2.2.2.4* Christiane Nord and the functionalist approach in translator training, some authors propose that translation problems cannot be pre-defined objectively, as it depends on the quantity and the quality (nature) of expertise what presents itself to a translator as a problem. Although Nord distinguishes between subjective and objective translation problems, by doing so, she only explains the phenomena, but does not offer a solution for the dilemma. As a consequence of an inappropriate selection of translation problems, situations might arise, where nearly all the translation problems are solved with success, but the overall impression made by the TT is still poor (MacAlester, 2000).

Another advantage of the method is that criterion-referenced evaluation could be based on it. Translation problems can be chosen to cover certain areas and the developmental level of a sub-competence could be expressed in percentage points. Nord's classification of translation problems (pragmatic, intercultural, interlingual, text-specific) could form a base for such evaluation, although her categories are somewhat broad for these purposes, particularly the unstructured nature of the interlingual category may cause problems. Nevertheless, positive evaluation can be built on any other sophisticated evaluation system (see e.g. Dróth's criteria in the previous section). Well-selected items (translation problems) could reduce scoring time considerably, as there would be no need to carry out error analysis on the whole TT. However, this can only be done, if performance on the selected criteria correlates strongly with both the results of error analysis and holistic scores. This can only be affirmed after testing the translation problem test in practice. In consequence, devising and verifying such a test is fairly time- and energy-consuming.

Positive evaluation has been employed primarily in the Barcelona school (Beeby, 2000b), but so far, no efforts has been made to test the method empirically. Beeby's account suggests that positive evaluation is best used in combination with other scoring techniques (error analysis and holistic evaluation).

Special attention should be paid to Orozco's (2000) and Orozco and Albir's (2002) attempts to create multiple-choice test items to assess whether translation problems were recognized in a test or not. As the text which the test is attached to is translated by the students and positive

evaluation is applied, as well, the test offers a more detailed picture of the students' competence: it is possible that someone is successful in solving a translation problem, but the test may reveal that he or she did not even realize that he/she had to do with a translation problem. On the other hand, students who equally produced incorrect solutions may differ in whether they have recognized and tried to solve the problem or not. This method, however, can only be utilized in translator training as a formative technique, as it presupposes that students are taught to recognize translation problems. As it is well-known from process-oriented studies (see *Section 2.5.3*), professional translators' problem solving is often automatized, suggesting that they "do not recognize" certain problems, but immediately solve it. It is an interesting question whether on conscious probing they would be able to delineate translation problems or not, but again, without empirical research nothing certain can be stated about this.

2.4.3.11 Alternative and complementary assessment methods

Especially in formative and diagnostic evaluation, instructors often face the problem that the product of the translation process, that is, the target text, does not offer enough information on the strength and weaknesses of the individual translator. To compensate for this problem, several institutes use complementary assessment methods.

Having students compile *portfolios* is a popular contemporary technique in educational evaluation. There are different types of portfolios, but in general, we can define them as a collection of student work that reflects achievement and development over time. A major advantage of using portfolios in translation competence evaluation is that it can give account of several areas of translational expertise. A portfolio informs both the student and the professor on how the student can cope with different types of texts and translation problems and how he or she has developed in these aspects. On-the-spot translation of a single, relatively short text exposes much less about the translator's competence.

At some institutes students are required to prepare notes or a *translation diary* accompanying the target text. Notes and diaries can be regarded as the written version of think aloud protocols. They include a description of recognizing, analyzing and handling translation problems on the part of the student. As a result, they allow teachers to gain insight into students' cognitive processes, which in turn, helps instructors to form a more comprehensive picture of students' strengths and weaknesses. Adab (2000) points out that diaries are also called upon when determining the final grades for translations. Diaries may not only reveal promising strategies behind an unacceptable TT segment but may expose cases when appropriate solutions are found merely by chance, too.

In addition to open ended translation tasks, Orozco (2000) and Orozco and Albir use *questionnaires* that gather information on students' *implicit translation theories*. Some scholars (e.g. Tirkkonen-Condit and Laukkanen, 1996, Risku, 1998) claim that the translator's concept of translation determines his/her global strategies, which in turn, have an influence on local strategies, and finally on the quality of the target text, too. Orozco's questionnaire probably wants to detect to what extent dysfunctional translation concepts can be made responsible for certain (types of) translation errors.

Orozco and Albir (2002) also employ a questionnaire to reveal how certain background factors interact with translation competence. The questionnaire is also used for collecting data on hypothetical sub-competencies. Items usually cover issues like task perception, using reference materials and applying translation techniques.

2.4.4 Conclusions on the evaluation of translation competence

Although translation competence evaluation belongs to the everyday realities of translation teaching, as we have seen, the systematic study of evaluation techniques has begun only recently. The available literature suggests that several evaluation methods are operated in training institutions, there are, however, only few planned and verified evaluation systems. The fact that psychometric properties of the evaluation methods are not checked causes special problems. On the one hand, distrust against translation evaluation and doubts concerning its legitimacy mentioned by several authors (e.g. Hatim and Mason, 1997; Klein-Braley and Smith, 1985; Stevenson, 1985; Heltai, 2005) may be rooted in this phenomenon. On the other hand, the lack of providing the psychometric indices of the evaluation methods contributes to and perpetuates the lack of empirical research, particularly that of correlational studies. If a factor cannot be characterized by reliable numbers, no meaningful relations can be established with other factors via statistical methods.

After realizing the problems described above, we have decided to test several evaluation methods in our study to discover their strengths and weaknesses and to determine their psychometric properties as precisely as possible. For a detailed description of the research design see *Section 3.2*.

2.5 Process-oriented research in translation studies

Uncovering the development of mental processes related to translation was defined as a major objective of this work. As opposed to product-oriented translation competence evaluation, we could rely on a wide, although young research tradition when we planned our TAP study (for an overview of TAP studies see e.g. Kussmaul and Tirkkonen-Condit, 1995; Tirkkonen-Condit, 1996; Fraser, 2000; Bernardini, 2001; Tirkkonen-Condit, 2002a; Krings, 2005).

In this chapter, antecedents of our research will be presented. A short introduction is followed by a thorough discussion of methodological issues. Then, previous research efforts will be reviewed and analyzed in detail. The chapter ends with a summary.

2.5.1 The beginnings of process-oriented research

Process-oriented translation research began in the 1980s and the first publication that became widely known was Krings' dissertation in 1986. There are several reasons for this turn to process oriented research in translation studies. From the 70s on we have been witnessing the triumph of cognitive science. With the advent of cognitive science interest in what happens in the human mind appeared again. Moreover, cognitive psychology not only thought of mental processes as phenomena that can be investigated empirically but it offered techniques to carry out these investigations as well.

Parallel to this, translation studies had gradually become an established field of humanities with its own 'program' for research. Holmes not only gave a name for the discipline but proposed a classification of research within translation studies as well (Holmes, 2004⁸). Holmes was well ahead of his time and discussed some research fields that were practically non-existent those days. Process-oriented descriptive research belongs to this group. It was probably not the fact that this category was empty in Holmes' classification that gave the impetus for think-aloud studies, but it definitely offered justification and a solid place within translation studies for investigations closely connected to psycholinguistics and cognitive science.

At the same time, in many countries translator training gained acceptance at university level, which resulted in a growing interest in issues related to teaching translation, thus in translation competence, its development and the cognitive and affective processes of translation.

These factors contributed to a large extent to the proliferation of process oriented research in the past twenty years. These investigations have brought some interesting results but there are still some disputed issues concerning methodology and the interpretation of the findings. In this chapter we will give an account of what we have learnt from process-oriented research so far and what problems there are that have remained unresolved yet.

2.5.2 Methodological issues

Process-oriented research in translation studies has mainly relied on the technique of verbal reporting. Predominantly concurrent verbal reports were collected and analysed though there are a few instances of using retrospection (Fraser, 1993, 1996; Ivanova, 2000; Alves, 2003a) peer translation (House, 1988; Matrat, 1992; Kussmaul, 1993; Séguinot, 1996) and more recently, 'computer logging' (Hansen, 1999; Dragsted, 2005; Heiden, 2005) as data collection methods.

⁸ Holmes' ideas on the emerging discipline of translation studies were presented at an AILA conference as early as 1972, but were published only in 1987. The citation here refers to a version in Venuti's Translation Studies reader.

Verbal reports were extensively used for studying mental processes in early psychological research (Börsch, 1986; Atkinson et al., 1997) but in the era of behaviourism they were not accepted as reliable sources of information on inner processes. In the 1970s cognitive science restored the reputation of verbal reports and from the 1980s on we have seen a large increase in the use of verbal data to study cognitive processes. Most recent research is carried out within an information-processing framework and is based on Ericsson and Simon's (1985, 1999) model of collecting and analysing verbal data. In the following sections we will give a concise account of Ericsson and Simon's main ideas and principles concerning protocol analysis. Then problems of adapting their methodology to research in translation studies will be discussed briefly.

2.5.2.1 A theoretical framework for verbal reports – information processing

According to cognitive psychologists cognitive processes are sequences of “internal states successively transformed by a series of information processes” (Ericsson and Simon, 1999, 11). These ‘states’ can be described and verbalized as they enter short-term-memory (STM). It is important to emphasize here that it is *not the processes* themselves that enter STM but the input and the output of these processes (= states). As a result, verbal reports are accounts of in-between steps in cognitive processing and we have to construct processes on the basis of these data, that is, on the basis of the steps.

Another basic tenet of cognitive psychology is that we can only verbalize information that is brought into the STM. However, as it is widely known, highly practiced processes become fully automated, which means that “intermediate steps are carried out without being interpreted and without their inputs and outputs using STM” (Ericsson and Simon, 1999, 15). Consequently, steps of automated processes do not enter STM, as a result, they cannot be verbalized either. Thus, automation is expected to produce incomplete protocols. As automation is a dominant feature of expert behaviour we expect experts' protocols to be more “incomplete” in this sense than beginners' protocols. Nevertheless, instances of automation can be captured and they can serve as the basis of further analysis too.

The assumption that only information heeded in STM can be verbalized has far reaching consequences for the instructions that the experimenter must give to the subjects and for the methods of analysing and interpreting verbalisations. These issues will be discussed in detail in *Sections 2.5.2.4 and 2.5.2.5*.

2.5.2.2 Types of verbal reporting

Ericsson and Simon distinguish between *concurrent* and *retrospective* reporting. In *concurrent* reporting subjects are simply asked to tell ‘what goes on in their mind’. This is why the method is called think aloud or talk aloud too. Although later research (even Ericsson and Simon themselves!) tends to mix these two terms, Ericsson and Simon make a distinction between them. In the case of ‘Talk Aloud’ information is verbalised as soon as it enters STM, as a result, there is no chance of distortion or slowing down. This is called *Level 1* or *direct* verbalization, too.

The ‘Think Aloud’ technique in its original sense refers to *encoded* or *Level 2* verbalizations. When information processed in STM is coded non-verbally like in the case of visual tasks, recoding (into words) is necessary before vocalization can occur. In these cases thinking aloud may *slow down* the observed cognitive process but we *do not expect any changes in the steps* of cognitive processes themselves.

In addition, Ericsson and Simon identify a third type of concurrent verbal report, which they call encoded *Level 3* verbalization. In this case, intermediate processes other than mere verbal coding occur between the information's entering STM and its vocalization. This happens when the subject is asked e.g. to verbalize selected information only, or to describe his/her

motor activities in the process, or to reflect on his/her reasons or motives etc. These instructions cannot be carried out without filtering, or attending to information that is not represented in STM in normal circumstances. As a result, level 3 verbalization not only decelerates the cognitive processes but changes the sequences of heeded information, too. Ericsson and Simon advise on avoiding instructions that result in level 3 reports as there is good reason to suppose that they reflect distorted cognitive processes.

When subjects are asked to report their thoughts just after the task has been completed, we talk of *retrospection*. In retrospection “subjects use cues in STM to retrieve LTM memory traces of the previously heeded thoughts (Ericsson and Simon, 1985, 261).” Ericsson and Simon stress that retrospective verbal reports can only be applied to processes that can be completed in 0,5 to 10 seconds and that retrospection should immediately follow the completion of the task. If a series of tasks or a complex task is given to the subjects, several retrospective reports must be recorded after carrying out the individual (sub-)tasks. In their early writings Ericsson and Simon preferred concurrent reporting to retrospection, but in the revised edition of their book (1999) they argue that under carefully controlled conditions (which mainly include improved instructional procedures) retrospective reports may gain valid and reliable data too.

An important tenet concerning instructions both in retrospective and think aloud studies is that subjects should avoid explaining or analysing themselves. Some subjects have an inclination to do so, others may simply misunderstand what they have to do, consequently instructions should include an explicit warning against the subjects analysing themselves. The reason for this is that subjects need to access additional thoughts and information to explain their actions. As a result, thoughts and information that are normally not necessary to solve the problem intrude STM and disturb or may even disrupt the process (see Level 3 verbalizations above, too).

2.5.2.3 Potential problems with and dangers of using verbal reports as data

As already mentioned, performing a task with TA verbalization requires more time than doing it in the silent condition. The question arises whether thinking aloud affects performance in any other ways. Ericsson and Simon insist that it is usually inappropriate methodology that results in altered performance or inconsistent research results. The wording of the instruction, the quality and the quantity of the interaction between the subject and the instructor, the experimental conditions etc. may mediate the effect of TA.

There are, however, certain phenomena that cannot be accounted for by methodological shortcomings. One of them is the finding that in certain cases, TA improves performance (Ericsson and Simon, 1999). Livjberg and Mees (1999) also reported that some of their subjects said that thinking aloud made them aware of what they were doing. The possibility cannot be ruled out that this raised consciousness results in better performance.

Ericsson and Simon also devoted a short section to the problems of TA research in reading. As reading comprehension is a vital element of translation, related research findings are especially important from the point of view of our study. Furthermore, as both reading and translation are linguistic activities, it can be expected that similar problems affect translation as reading.

It was observed that think aloud protocols of subjects reading aloud were usually rather incomplete and uninformative. The subjects vocalized little more than the text itself. However, the amount of verbalization could be increased when the reading process was slowed down, for instance, by displaying sentences separately. We are of the opinion that this may be explained by the fact that encoding and vocalizing the text is probably automatic in adults, that is, it spares space in STM for comprehension processes. However, the subject is

unable to say what is in his/her STM because the speech production system is already taken by the automatized vocalization of the text.

Elekes (2000) argues that the difficulty of the text is another factor influencing the amount of verbalizations. Difficult texts are expected to elicit more thinking and talking. The difficulty of the text is certainly a subjective concept, the language of the text (L1 or L2), its syntactic, lexical or textual qualities and sophistication as well as the background knowledge of the subject may play a role in determining it.

In addition, Waern (1979, cited by Ericsson and Simon, 1999) found that the protocols of subjects who read with the purpose of applying the information clearly diverged from those produced by subjects simply asked to read. In the translation process, reading is obviously done with a certain purpose. As a result, a special kind of reading is expected from translators. Another issue is discussed in a recent study by Kim (2002), who showed that TA can have an impact on subjects' performance and that this impact is probably a function of culture. Kim found that Asian Americans' performance on problem solving tasks was impaired by think aloud but not that of European Americans. She suggested that cultural assumptions related to thinking and talking might explain these results. Eastern thinking, as opposed to Western thinking, does not suppose any close relation between talking and thinking. As a result, Asian Americans tend to use less internal speech in problem solving. Consequently, asking them to talk aloud is equivalent to asking them to deliver "speech" they do not normally produce. Kim's results warn against the uncritical use of TA. Although we have no research data to support our standpoint on the issue, but we think that Hungarian culture is nearer to Western culture in this respect than to Eastern thinking, as a result, we see no difficulties in carrying out a TA task with Hungarian subjects.

There are some problems explicitly related to verbalizing during translation, too. Jääskeläinen (2000) argues that simultaneous task performance (e.g. talking *and* translating) may suffer if the two tasks are in the same domain. In a similar vein, Hansen (2005) claims that bilinguals may have serious problems with TA while translating. Bilinguals face the problem of keeping the two languages apart in everyday situations too. In translation, the danger of mixing increases and asking them to verbalize (in one language) apparently leads to a complete break-down: Hansen's bilingual subject could not escape code-mixing while trying to translate and verbalize at the same time. The finding is in line with what we know of bilingualism, but it is closely related to another dilemma, that of classifying bilinguals. The question is what types of bilinguals are affected by the phenomenon. As Hansen mentions only one subject, the problem remains unresolved.

Further, Hansen argues that translating into the L2 should be avoided in TA experiments as they induce unwelcome interferences because the subjects are usually talking in their L1 while at the same time trying to produce a text in the L2. This is in sharp contrast with researchers suggesting the observation of L1→L2 translation although for different theoretical considerations (e.g. Lörscher, 1991b; Bernardini, 2001).

Drawing on modern brain research, Hansen also expresses doubts about the validity of TA. As much more information is activated in the human brain within in a second than what could be verbalized, thinking aloud is – by definition – retrospection and involves selection:

„Thus, during the translation process, the translator not only takes decisions as to how to translate, but at the same time, decides what to mention and what not to mention – and this happens in accordance with his/her former experience and emotions. (Hansen, 2005, 516)

As a result, she comes to the conclusion that there is not much difference between TA and retrospection.

Both the proponents and the opponents of the TA method agree that thinking aloud does not provide a full picture of mental processes. We agree, however, with advocates of the method that TA does reveal a significant proportion of what goes on in “the black box”. As a result, it is worth concentrating on what we can learn with the help of TA. Limitations of the method should be taken into account when interpreting the findings.

2.5.2.4 Further recommendations on data collection

As we have seen, Ericsson and Simon place emphasis on the exact wording of TA *instructions*. The more general the instruction the higher the chances are that the subjects will be engaged in “normal” problem solving. Requests for completeness, for producing specific content or explanation should be avoided as they may distort the usual cognitive process.

If the experimenter is present during the recording of the protocols, he/she might *remind* the subjects to talk when they lapse into silence. The reminders should be standardized and again, kept as short, and general as possible. “Please, keep talking” is the widely recommended reminder, which is believed to have a negligible effect on the subjects’ processing. On the other hand, the “what are you thinking about?” type of reminders should be avoided as they are more likely to induce self-observation instead of simple reporting.

However, the researcher *need not necessarily be present* at the experiment. The researcher’s presence was indispensable in the early days of verbal reporting when no technical equipment was available for recording. But nowadays, the experimenter does not have to make any notes while the subject is thinking aloud, so he/she can stay away from the experiment. If the researcher still decides to attend the session, both the researcher and the recording instrument should be out of sight of the subjects to reduce anxiety.

According to Ericsson and Simon, a major advantage of TA as compared to classical introspection is that the former does not require extensive training. Nevertheless, in most studies at least an initial warm-up exercise is given to subjects to acquaint them with the TA technique. Other researchers may use more extensive warm-up exercises or even training sessions. To sum up, extensive training is not compulsory, but a warm-up exercise is vital for the success of the project.

On the basis of existing research results, Ericsson and Simon conclude that there are considerable *individual differences* in the capability of verbalizing. Some of these differences are related to visual tasks and the subjects’ individual processing styles (verbal or visual). These differences have no relevance for our studies. Other individual deviations from the expected verbal behaviour (e.g. “think-then-summarize” type of verbalizations) should be detected in the warm-up or training phase, and the subjects should be asked explicitly to comply with the instructions. Nevertheless, certain individual differences in verbalization are expected to persist.

The age of the subjects is an issue related to individual differences. Most TA studies were conducted with college students or with other educated adults as TA is thought to require considerable effort, control and concentration on behalf of the subject. However, Elekes (2000) argues and cites other research (Cohen, 1986; Sarig, 1987; Wijgh, 1995) in defence of her position that verbal reports can be applied with a much wider range of population on condition that appropriate training is provided to the subjects.

Finally, as we have seen above on the examples of visual tasks and reading, the *nature of the task* in the experiment may influence the quality and the quantity of verbalizations too. These factors must be taken into account in analysis.

2.5.2.5 Analyzing Protocol Data

Ericsson and Simon offer guidelines not only for collecting data but for encoding and analysing them too. The recordings of the protocols must be transcribed first. Transcription is necessarily a selection of information. The filter of this selection is determined by the research focus/questions. Then the transcripts must be segmented. Each segment corresponds to a statement, and linguistically it can take the form of a sentence, a clause or a phrase. In the next step, segments are encoded. Ericsson and Simon recommend that the segments should be presented to the coders in a random order, so that they rely exclusively on the information contained in the segment itself when they decide on the segment's category. However,

“When the segment is fragmentary, or contains anaphoric reference (...), context – preceding and following segments – may need to be consulted to remove ambiguity, but (...) the range of context used is kept as narrow as possible.” (Ericsson and Simon, 1999; 266)

Context-free encoding is believed to prevent “contamination” of data by the theories and expectations of the researcher and the coders. In addition, Ericsson and Simon argue for employing all-inclusive categories that are mutually exclusive of all other categories. They explicitly warn against analysis based on impressions and against encoding without any pre-established systems. They also insist on establishing coding categories even before data collection starts on the basis of task analysis. This is, however, problematic, when the task involves ill-defined problems. In such cases pilot work is necessary to establish encoding categories in advance. In the last chapter of their book Ericsson and Simon present numerous examples of coding and analysing techniques to help further research.

In an article of 2003, Yang questions some aspects of Ericsson and Simon's encoding technique. Yang argues that in the case of ill-structured and complex activities context-free encoding and mutually exclusive categorization may be an illusion, and their application may result in the distortion of the information stored in the data. Since translation is usually regarded as an ill-defined problem, Yang's proposals concerning the modification of Ericsson and Simon's technique are of vital importance.

Yang puts forward a “context appreciative and multiple co-defined categorization to reflect more faithfulness to ill-structured data” (Yang, 2003; 108). Yang stresses the sign-constructing activity of the researcher, which makes the mechanic coding of data impossible as meaning is not inherent in the data. Furthermore, categories of statements cannot be determined as rigidly as Ericsson and Simon thought, especially in the social sciences. According to the theory of parallel processing, cognition is multi-layered and cognitive processes occur simultaneously and interdependently. This parallel processing must be reflected in the verbal data to a certain extent, too, and it is only multiple categorizations that can account for this phenomenon. Cognitive processing is not only simultaneous but it is situationally determined, too. Consequently, coding as an interpretive act cannot be made without taking contextual clues into consideration. However, researchers and coders should constantly monitor themselves in order to prevent their theories and hypotheses to interfere with the analysis.

2.5.2.6 TA methodology in translation research

When think-aloud methodology is used in translation research, it shows some deviations from Ericsson and Simon's original model. Some of the modifications can be explained by the nature of translation as a complex, open-ended activity. However, some divergences are simply due to a sloppy handling of methodology, which compromises an otherwise accepted technique. It is of fundamental importance, that scholars engaged in TA studies in translation

make efforts to follow methodological prescriptions as strictly as possible as translation itself poses more than enough problems for the researcher.

The most salient feature of TAP studies in translation is the *small sample size*. Whereas in cognitive science normally at least about 30 subjects are involved in a TA study, and it is not unusual to have even more subjects, the average sample size in translation studies is about 4-8, and it is seldom more than 10. Moreover, there are studies with a single subject, too!

Small sample size results in a poor generalizability of the results – a fact, translation scholars are painfully aware of. However, several problems hold back researchers from working with larger samples.

First, the translator community itself is rather small, even if we include language learners. Finding subjects who are ready to devote the time and energy to take part in a research, to sacrifice several hours from their spare time and to take the risk ‘being analyzed’ further reduces the number of potential participants.

Handling a large sample is problematic for the researcher, too. The complexity of the translation tasks results in a huge amount of unstructured data as compared to mathematical computations or problem solving. A subject in a translation TAP project is not only likely to produce more utterances, but the utterances are probably more unstructured and more difficult to interpret, too.

The first difficulty the researcher faces is the amount of the data that must be transcribed and prepared for interpretation. It usually takes several months or even years to transcribe recordings. As opposed to quantitative research, writing down the data cannot be delegated to unskilled workers because the danger of misunderstanding is great and may result in a serious corruption of the data. Coding and interpreting can be similarly painstaking as transcribing. As researchers are usually motivated to complete their projects within their lifetimes, they tend to decide for a viable sample.

There are some ideas that could help in escaping from this dead-end. As many researchers have realized (Jääskeläinen, 2000; Tirkkonen-Condit, 2002a), cooperation could help in increasing sample sizes. The problem is that most planned cooperations (e.g. TRADE, EXPERTISE) are international, which means that further variables are introduced in the study (e.g. cultural background and language pairs). As a result, the overall sample size may expand but the sub-groups do not, and as the sub-groups differ along important factors, it is questionable whether they can be treated as a homogeneous group.

It would be also worth considering whether computers can be involved in coding and counting. In the coding process, usually certain words and expressions are looked for by the researcher. Instances are then counted and the numbers are compared and analyzed. Theoretically, searching and counting could easily be done by computers, but we know of no such use of computers in TAP studies.

Probably, financial problems also contribute to the fact that small sample size persists in TAP research. Large sample size is associated with large expenditure but translation studies being a newcomer in the field cannot expect as much financial support as the more prestigious and established field of psychology.

Finally, a word of caution must be added in relation to small sample sizes. Researchers engaged in TAP studies usually emphasize the fact that their findings can at best be treated as *hypotheses* about the translation process. Nevertheless, there is a tendency in secondary literature to *handle these hypotheses as facts*. This is a gross error that should be avoided by all means.

Another characteristic feature of TAP studies in translation is the *lack of control concerning background factors*. It is probably related to small sample size and the difficulty to find subjects for the study. The researcher is just happy to have enough subjects for his/her project and simply has no possibility of selecting subjects according to criteria. The problem is

further complicated by the multitude of background factors that should be taken into account. In his review of TAP methodology, Krings (2005) differentiates between translator-related, task-related and context-related background factors. Each category contains four further sub-factors. So many factors simply cannot be controlled with small-scale studies. Because of the small sample size, sub-groups differing on certain factors (e.g. language competence) cannot be created. Further, because of the lack of financial resources and the large amount of work anticipated for the TA study itself, there is usually no opportunity to measure background variables. More sophisticated studies usually refer to this problem (e.g. Krings, 1986b; Lörcher, 1991b; Jääskeläinen, 1999, 2000), some authors, however, tend to pass over the issue.

Some researchers (House, 1988 and Matrat, 1992 see below for a detailed discussion) have criticized thinking aloud as artificial and proposed pair or joint translation as a more natural method that offers richer data on translation processes. The small number of research results in this field prevents us from drawing conclusions. Nevertheless, we found the methodology of pair translation so promising that we decided to apply it in our study.

Bernardini (2001) criticizes several TAP studies for *not* minimizing social interaction during the sessions. Engaging in social interaction either with the researcher or with another subject may induce mental processes other than the ones related to the translation task. As a result, Bernardini believes that the presence of the researcher during the experiment or the peer translation configuration seriously compromises the validity of the method. On the other hand, Krings (1986b) and Jääskeläinen (1991) claimed that being present at the sessions raises the ecological validity of the projects, as the researcher has the opportunity to prompt the subjects to verbalize when they are silent for longer periods.

As for peer translations, we agree with Bernardini, that a TAP is either a TAP or it is not. Peer translation is a *different* data collection technique, and not a version of TAP. In that case, social interaction is accepted by the researcher and taken into account when analysing the data. Peer translation will be used in this sense in our study.

It is worth noting here that according to Jääskeläinen (1999), although translators are expected to produce a monologue that is undisturbed by any distracting emotions or social interactions, their protocols contain signs which prove that they are actually *talking to* the experimenter and trying to live up to his/her requirements.

A further – not necessarily negative – characteristic feature of translation TAPs is that categorization of segments in the protocols is usually post hoc. The ill-defined nature of the translation task and the lack of both theoretical and empirical precursors of the investigations forces researchers to set up their own categories for analysis.

A problem often cited by other scholars too (e.g. Jääskeläinen, 2000, Bernardini, 2001) is that the methodological rigour required by Ericsson and Simon is seldom kept in these studies. Jääskeläinen (2000) argues, however, that translation as an ill-defined task may require other methodological approaches than tasks where the path between the problem and the solution(s) is clear.

On the one hand, we agree with Jääskeläinen's argument, on the other hand, certain practices cannot be left unnoticed. A salient feature in many studies is the intuitive nature of the analysis of the data. Very often, scanning the data evokes ideas in the researcher and then he or she brings examples to support his/her ideas, but no systematic analysis is carried out in terms of presenting numbers of cases.

It is also possible that, as Bernardini (2001) refers to it, the *presentation* of the research results is problematic:

Most of the research reports [...] describe the research design summarily, present findings in an anecdotal fashion, do not provide any statistical analysis of their data (and sometimes not even the data themselves) and leave central theoretical assumptions unexplained. The reader thus finds it difficult to assess the validity of the results obtained. (Bernardini, 2001, 251)

It must be noted, however, that researchers vary to a large extent as to how strictly they adhere to the principles of TA methodology. As positive examples, the German and the Finnish tradition must be mentioned here.

Realizing the problems of validity in TAP studies, researchers started to advocate the idea of *triangulation* (e.g. Hansen, 1999, Tirkonnen-Condit, 2002, Alves, 2003b) in data collection in order to gather as much valid information on the translation process as possible. Triangulation means collecting several types of data on the same translation process. Types of data include traditional TAPs, observation by researcher, video-recordings, analysis of target texts, interviews and log-files created by computers. Although the idea of triangulation deserves appreciation, its application is not less problematic than that of the TAP technique. Triangulation means generating more data, which, in turn further increases the workload of the researcher. Consequently, triangulated studies often cannot make use of the possibilities offered by multiple data collection. Research reports are short of a systematic description how different types of data relate to, support and complement each other.

In summary, it can be concluded that TA methodology in translation research is very similar to TA techniques in other disciplines. However, translation TAPs are often characterized by a loose treatment of methodology, which must be fought back in further research.

2.5.3 Antecedents of our study – previous research results

As already mentioned, process-oriented translation research has been flourishing since 1986, and the past 10 years have been especially productive. By now, we have reached a stage, where it is impossible to give an all-embracing overview of individual research efforts, as Jääskeläinen did in 1999. Consequently, we shall concentrate on previous projects that serve as a methodological and conceptual base for our research. The reviewed studies are grouped according to the data collection techniques they used: TAP-studies, peer translation projects and investigations with computer logging are described in the following sections.

We have considered systematizing the vast amount of TAP studies according to the focus of the research. Interestingly enough, however, research questions seldom recur in investigations; as a result, classification according to research topic has not turned out to be parsimonious. At the same time, a geographical pattern of the studies became apparent: there is a methodologically sound German tradition, a creative and ambitious Nordic school with strong Finnish dominance and there are some other researchers scattered all around the world struggling alone with the difficulties of carrying out TA examinations. Process-oriented studies will be presented in this classification.

2.5.3.1 The German TA tradition

The German TA tradition can be characterized by methodological rigour and quantification. The most influential figures are Krings and Lörcher but there have always been other research efforts in German speaking countries, too (see e.g. Hölscher and Möhle, 1987, Königs, 1987, Kussmaul, 1993, Alves, 1995, House, 2000, Rodrigues, 2001). The works of Krings and Lörcher will be reviewed here in detail, while other studies will be summarized briefly.

2.5.3.1.1 *The beginnings – H.P. Krings’ studies*

In his pioneering work, Hans Peter Krings (1986a, b) concentrated on advanced language learners’ translation problems, translation strategies, use of reference materials and evaluation strategies. He also aimed at setting up a translation process model on the basis of empirical data. Krings studied both L1→L2 and L2→L1 processes, and had four subjects in each category. He selected relatively difficult texts (news items) for the study, so that they contain enough translation problems. No translation brief was included in the task, but the subjects were allowed to use their own dictionaries. There was no prior training to the TA sessions, but a warm-up task preceded the ‘translate-aloud’. Krings sat in front of the subjects while the recordings were made, in order to observe and note any interesting events and to remind subjects of verbalizing.

One of the most important outcomes of Krings’ study is his *indicator system of identifying translation problems*. Krings differentiated between primary and secondary indicators, and proposed that there must be at least one primary or at least two secondary indicators in a segment to regard the translation of a specific string as a problem. Primary indicators include the explicit or implicit identification of the problem by the translator him/herself, the use of reference materials and gaps in the TT. Secondary indicators are as follows: contesting TL versions, modifications in the TT, underlinings in the ST, negative evaluations of certain TL segments, metacognitive statements on translation strategies, unfilled pauses (longer than 3 seconds), paralinguistic pointers (laughs, sighs etc.).

Krings found that 90% of all verbalizations were related to translation problems. Further, L1→L2 translation could be characterized by more problems than L2→L1 translation. In both types of translations, about half of the problems presented itself as a problem only for one subject. About 20% of the problems was a problem for all (four) subjects.

Problems were classified into three categories: comprehension problems, production problems and combined comprehension-production problems. These types of problems are approximately equally distributed in the data: each problem represents about one third of all problems.

Krings also makes an attempt to discern the background factors resulting in translation problems, that is, he tries to draw the line between real translation competence induced problems and L2-deficit induced translation problem. As he himself admits, drawing this line is extremely difficult and in most cases cannot be done with absolute certainty. He argues that comprehension problems in most cases are language competence problems. We would suggest that L2 performance problems may result in nonrecurring difficulties in understanding the ST, too. In L2→L1 translation production problems are considered to be real translation problems. Theoretically, however, they could be related to L1 competence, a factor not usually checked in studies. Combined comprehension-production problems are either purely linguistic in character or they have a dual nature: they may include a linguistic and translation element, too.

Krings' other significant findings relate to **translation strategies**. Relying on Faerch-Kasper's (1983 cited by Krings, 1986b) concept of language learning strategy he defines translation strategies as

“potentiell bewusste Pläne eines Übersetzers zur Lösung konkreter Übersetzungsprobleme im Rahmen einer konkreten Übersetzungsaufgabe.“ (Krings, 1986b, 175)

[potentially conscious plans for solving a translation problem in a specific translation context.]

Further, Krings distinguishes between macro- and microstrategies. Macrostrategies are global ways of handling problems in general, while microstrategies concentrate directly on individual problems. Global strategies include splitting up the translation into to sub-tasks (apparent in translation phases), applying successive processing strategies, off-loading strategies, and brainstorming, top-down and bottom-up strategies, etc. Krings determined three phases of translation: drafting (Vorlauf), producing/composing (Hauptlauf) and revising (Nachlauf), which are supposed to be important categories for further analysis.

Microstrategies are studied in several ways. First, linearity vs. circularity was examined, and Krings found that L1→L2 translation can be characterized by being more linear than L2→L1 translation. Moreover, he discovered that most translation problems were handled in one phase only (usually the production phase), and more often than not, within one sentence. He concluded that the sentence seems to be the default unit of translation, and the reasons may be found in the characteristics of human information processing system, more precisely, in the limited capacity of STM.

Microstrategies are further divided into **comprehension-strategies**, production-strategies and evaluation-strategies. Comprehension strategies are studied only in relation to L2→L1 translation, and they are grouped into two categories: inferencing and using dictionaries. Using dictionaries is the more frequent strategy; it is involved in about 75% of all comprehension strategies. Inferencing is usually used prior to consulting dictionaries, and the reference material in most cases confirms the hypotheses set up by inferencing. Bilingual dictionaries are used considerably more than monolingual dictionaries. Krings could also identify errors in using reference materials, like looking up a derived form, misinterpreting the information found in the dictionary, misreading information, not consulting the dictionary or not being familiar with abbreviations and signs used in dictionaries!

Production strategies aim at finding the most appropriate TL form for a specific SL unit. The final solution is usually reached through several translation versions. If a production problem in L2→L1 translation is combined with a comprehension problem, there are a handful of strategies that can be used to solve the problem. The most simple one of them is the so-called ‘*insertion strategy*’. When it is used, the translator simply inserts the result of his/her inferencing or dictionary search into the TT. If this item cannot be fitted into the text for some reasons, a ‘*reverbalization strategy*’ may be activated.

Krings observed that comprehension and production strategies are often melt together in a sense that TL versions are, in fact, hypotheses about possible meanings of the ST and not real stylistic versions. In these cases, translation occurs without understanding! This is often admitted by the subjects themselves.

The dictionary proved to be an important instrument for finding TL solutions, too. Although there were large individual differences, there was some evidence that those who used the dictionary less, tended to be more critical of the results and more cautious in their application. Furthermore, Krings made the interesting proposal that (word) associations play a crucial role in translation as the search for solutions happens through intra- and inter-lingual word associations. A special status is granted to ‘*primary equivalent associations*’, which are the

primary modes of generating the first TL version. Primary equivalent associations are defined as stable interlingual associations that are activated in the translation process. As translators tend to use a psycholinguistic “minimax strategy”, that is, they try to achieve maximum effect with minimum effort, primary equivalent associations are reassessed and modified only in case of emergency, that is, if the associations do not fit the TT. Primary equivalent associations are in most cases probably what Catford (1965) defined as ‘highest unconditioned probability lexical equivalents’: a TL item that appears most frequently as a translation of a certain SL item in translation situations.

Krings also discovered that there are some differences between production strategies used in L1→L2 and in L2→L1 translations. The most important ones are the following:

1. More translation variants are produced in L2→L1 translation than in the opposite directions.
2. In L2→L1 translation new translation versions are produced more often by combining elements of previous tentative solutions than in L1→L2 translations.
3. Reverbalization in the SL is made use of in L1→L2 translation, whereas reverbalization in the TL is used in L2→L1 translation. In other words, re-verbalization strategies always rely on the mother tongue.
4. Reverbalizaciones in the TL in L2→L1 translations result in a smaller deviation of the original meaning than reverbalizaciones in L1→L2 translations.
5. In L2→L1 translation several translation problems that are perceived as production problems by the translators, are in fact, covert comprehension problems.

Krings identified two additional types of strategies, **evaluation and decision-making strategies**. They are responsible for the selection of the final solution for a translation problem.

L1→L2 and L2→L1 translations were found again to differ according to the strategies utilized in them. In general, evaluation phases in L2→L1 translation are shorter and less problematic than in L1→L2 translations.

In addition, L1→L2 translations can be characterized by a dominance of the ‘*spot-the-difference*’ strategy, which concentrates on comparing TT elements with ST elements usually with an emphasis on issues of content. In L2→L1 translation most evaluative strategies are *appraisals of the acceptability* of the individual TT elements within the TT context. Translation maxims, which are defined as schemas for handling typical translation problems (e.g. word-for-word maxim, foreign word maxim etc.) are also employed, although to a lesser extent.

As for decision-making, *achievement strategies* are used most often in L2→L1 translation, which means persisting in the search for a solution as long as the subject does not find a satisfying one. A special form of reduction strategy appears in L2→L1 translation, too. This ‘*obscuring strategy*’ is put to use when the subject does not understand an ST segment and comes up with a vague or ambiguous TL solution on purpose.

Krings summarizes his findings in models of translation in the two directions and makes proposals for improving translation teaching. Particularly, he emphasizes the need to raise awareness in translation related issues in students as their principles governing the handling of translation problems were especially poor.

Although Krings’ work suffers from some shortcomings typical of pioneering efforts (sample too small, no professionals studied, theoretical void), his investigation can be still be seen as a model to follow. It is predominantly, his relatively strict treatment of methodology and the indicators and categories set up for analysis that deserve attention. Krings’ work is viewed as

a forerunner of our research and many techniques and research questions are derived from his study.

In a later article *Krings* (1988) compared the translation processes of a professional translator to those of language learners. His findings deserve special attention because they contradict not only common sense ideas of the differences between professionals and beginners but cognitive psychology's observations about the nature of expertise, too. Krings' results contradict the assumption that professional translators' processes would be more automated than those of beginners. He found that the professional translator identified more problematic points in the ST than beginners and he also produced more TL variants for a certain problem. Moreover, the professional turned to dictionaries and other reference books more often than language learners. However, if we examine processes more closely, we will see that the professional was engaged in more higher-order processing and problem-solving than language learners: for example, whereas language learners 'only' had problems with *understanding* the ST, the professional translator encountered problems with *forming* an appropriate, *coherent* TT. In other words, certain processes did become automated, but this only gave way to higher-order problem solving. It is not the number of problems that changes with experience, but their *nature*. Nevertheless, Krings' results must be handled with care as there was only one professional among his subjects.

2.5.3.1.2 Formalizing translation strategies – Wolfgang Lörcher

One of the dominant figures in German process-oriented research, *Wolfgang Lörcher* was chiefly interested in exploring the structure and the workings of translation strategies. He defined strategy as "a potentially conscious procedure for the solution of a problem which an individual is faced with when translating a text segment from one language into another" (Lörcher, 1991b, 76). Translation strategies start working when an individual realizes a problem and they cease functioning when the individual finds a (preliminary) solution or when he/she realizes that he/she is (temporarily) unable to solve the problem. In his first research Lörcher (1986, 1991a, b, 1992) examined advanced language learners who produced *oral* translations *from German into English and vice versa*. On the basis of the 45 protocols he distinguished between strategic and non-strategic phases of translation. *Strategic phases* are directed toward solving translation problems consequently, translation strategies occur within strategic phases. Lörcher set up an elaborate system of translation strategies by accurately defining their elements, which can be further classified as 'original' and 'potential'; and by differentiating between basic, expanded and complex structures of strategies. His model is a formal, hierarchical system based on generative principles. Accordingly, translation elements (1st level) are combined into translation strategies (2nd level). Translation versions form the highest level and they can consist of both strategic and/or non-strategic components. Translation versions are produced because there is a principle guiding apparently not only professionals' but language learners' translational actions too: the TT "should not merely convey the sense of the SL text (...) but should be an adequate piece of discourse produced according to the TL norms of language use." (Lörcher, 1992, 432)

As for the type of problems identified by his subjects, Lörcher found that lexical problems were the most frequent ones (70% of all problems) in the protocols followed by lexicosyntactic and syntactic problems. The large proportion of lexical problems can be ascribed to the rough categorization of problems. However, Lörcher claims that in a pilot-study he found that lexical and syntactic problems play the dominant role in language learners' translation processes. In addition, he found that subjects encountered slightly more lexical problems in translation into the L1. The finding that most problems detected by the subjects are lexical deserves attention. However, we do not have a definite answer for the question whether it is a

generalizable finding (i.e. lexical problems are predominant in every translation), a characteristic of language learners, or only an artefact of inappropriate categorization. In her PhD dissertation Dróth J. (2001b) claimed that word-level errors in a TT often do not denote lexical, but textual or functional problems. This might have been the case with Lörcher's naive translators, too.

After a quantitative and qualitative analysis of translation strategies Lörcher concluded that strategies of translation into and from the L1 differ to a large extent in degree but not in type. In other words, the same strategies are used by the translators in L2→L1 and in L1→L2 translation but in different proportion. Lörcher observed that his subjects used less complex strategies to cope with problems in L2→L1 translations than in L1→L2 translations. He assumed that translation problems into the mother tongue are less difficult to solve. Lörcher, too, found evidence for the use of the so-called "minimax" strategy (Krings, 1986b).

In a later project, Lörcher (1996, 2005) compared language learners' and professionals' translation strategies. He found that professionals' and non-professionals' mental processes were very similar though there were differences in the quantitative aspects of translation strategies. These differences could be observed in the distribution and the frequency of the strategies employed by the two groups. Language learners tended to take a *form-oriented approach* to translation, whereas professionals could primarily be characterized by *sense-oriented procedures*. It is interesting to note, that sign-(or form-)orientation and sense-orientation are often combined. Moreover, similarly to Krings (1986b), Lörcher argued already in his book (1991b) that, interestingly enough, reception problems may remain latent and may not cause problems in formulating the TT! In other words, the TT itself cannot always reveal reception problems and applied strategies (i.e. sign-orientation).

Lörcher also found that professional translators tended to work on larger translation units (phrases, clauses or sentences) while language learners concentrated on single words. An interesting consequence of this difference is that language learners usually realize problems *before* they start translating as they concentrate on smaller units, which can be processed more quickly. In contrast, translators generally realize problems only when they are already working on it. In addition, professional translators continuously monitor and check their TT, so they may notice translation problems *even after* rendering a segment into the TL. This is absolutely non-typical of language learners, who tend to check nothing but problematic segments in their TT, that is, whether the solution to their own problem was adequate. This has the well-known result that non-professionals' TTs mirror the SL's lexicon and syntax.

2.5.3.1.3 Further studies in the German speaking tradition

In an early process-oriented project, Königs (1987) divided cognitive processes in translation into an *Adhoc-block* and a *Rest-block*. Processing is automatic in the *ad hoc*-block, although outcomes of this automatic processing are not necessarily correct. Because of their automatic nature, transfers belonging to this block are highly resistant to self-correction and editing. Everything else belongs to the *Rest-block*, that is, individual translation problems, be they of linguistic or contextual origin. Whenever conscious processing occurs or when specialized translation competence is used, the processes belong to the *rest-block*. In his research, Königs investigated which elements of processing belong to which block and what happens to these elements in the blocks. He had 5 subjects (4 students and a professional translator) to think aloud while translating a text to their L1 with the help of a dictionary. Königs showed that *ad hoc*-processing was present on word-, sentence- and content-level, too. Automatic processing was partly due to spontaneous associations, but the impact of learning and previous experience was apparent, too. Elements of the *ad hoc*-block are not readily changed and the less experienced the translator is, the more difficult it is for him/her to detect errors in

the adhoc-block and correct them. Königs assumes that certain linguistic elements receive a stable rendering at the first reading and later they are looked upon as frameworks around which other elements have to be built.

Processes in the Rest-block are activated by the following problems: deficiencies in language or translation competence or in world knowledge and momentary performance difficulties.

Königs believes that this classification of students' typical processes and errors will assist teachers in both language and translation classes to define what they should do to foster their students translation competence.

Hölscher and Möhle (1987) investigated problem-solving processes of seven intermediate level language learners (French). In particular, they were interested in whether and how the five planes of planning defined by Hayes-Roth and Hayes-Roth (1979, cited by Hölscher and Möhle, 1987) appear in translation processes. Their research brought some evidence that translation can be characterized by an 'opportunistic model of planning', where plan development is less orderly, individual steps in planning take place at various points of the activity and they do not necessarily follow a strict hierarchical order. In addition, some of their subjects showed automated behaviour in relation to planning as evidenced by the lack of verbalisation of these processes. This is somewhat surprising as usually experts' and not novices' processes are believed to be automated.

House (2000) investigated advanced language learners' (10 university students') behaviour while translating from their L1 to their L2. Subjects had to translate once with the help of dictionaries and once without dictionaries. House could distinguish between high-risk-takers and low-risk-takers. High-risk-takers were characterized by confidence in both situations, whereas low-risk-takers were threatened by the absence of reference materials. Nevertheless, both groups displayed more creativity and a heightened degree of awareness when they had to translate without dictionaries. This may be regarded as another proof for students' inappropriate attitude to and use of reference materials: as soon as they get near to dictionaries, they give up independent thinking and tend to over-rely on translation aids.

Alves (1995) refined Königs' model in his dissertation and introduced a third level of processing in translation. When processing fails both in the Adhoc- and in the Rest-block, the translation problem is shifted into a third block, where decision-making is primarily determined by the concept of *relevance*. The working of this third block is supposed to be highly influenced by cultural factors. In his research, Alves studied 12 Brazilian and 12 Portuguese translators, translation students and language learners. Think-aloud protocols were recorded while the subjects translated a tourist text from their L2 to their L1. Subsequently, they had to fill in a questionnaire about their experiences with the project. Alves found that relevance-level processing was more typical of professional translators than of non-professionals. Experts often refrained from using dictionaries and other reference materials. They relied on world-knowledge and the relevance of certain information when bringing decisions. Non-professionals used external help (reference materials) more often: a result, which clearly contradicts Krings' (1988) finding (see above). Nevertheless, processing on relevance-level could be frequently observed in non-professionals, too.

In his dissertation Rodrigues (2001) studied the relationship between subjective translation philosophies, translational expertise and characteristics of the translation process. Eight professional translators translated a text presenting a book from German into Portuguese (L2→L1). The TTs were evaluated by three raters, semi-structured interviews were conducted and TA and retrospective data were gathered on the translation process. Relying on these

information Rodrigues asserts that there is an association between subjective translation philosophies and specific translational actions. The effect of theory was, nevertheless smaller than expected and probably influenced by several other factors like characteristics in information processing, language competence or text type. At the same time, no evidence was found for the connection between translational expertise and subjective philosophies.

2.5.3.2 The Nordic School of TAP

The German initiatives in process oriented research were quickly picked up by Finnish researchers and the enthusiasm has been spreading in Scandinavia ever since. By now, process oriented empirical research is dominated by the Nordic school, which includes Finnish, Norwegian and Danish researchers and institutes, as well. Translation research owes the discovery of computer logging to the Nordic tradition as well; consequently, several investigations will be presented in *Section 2.5.3.3*.

2.5.3.2.1 Experience as a factor influencing process and product - Jääskeläinen

Jääskeläinen's (1989) first study involved students with different degrees of experience. Two first-year and two fifth-year students translated a text from English into Finnish. Jääskeläinen was chiefly interested in how and to what extent the translation assignment is taken into consideration by her subjects. Consequently, a translation brief was constructed which asked for a TT with a slightly different function than what the ST had. The text had to be made less scientific and more informal. Jääskeläinen assumed that more experienced students would pay more attention to the translation brief than younger students when formulating the TT. However, first-year students were also found to take the translation assignment into consideration, particularly when facing a translation problem.

One of the most influential contributions of the Finnish school comes from *Jääskeläinen (1996, 1999)*, too, who compared professionals', translation trainees' and educated laymen's external (observable) behaviour, use of knowledge and personal involvement in the process of translation. External (observable) behaviour refers to such easily quantifiable features of the translation process like the duration of the translation process, the number of times the subjects worked through the text or the number of reference consultations. Jääskeläinen found that the laymen (non-professionals) were the 'fastest' translators, probably because they did not even realize translation problems. The longest protocols were recorded with translation students who were already sensitized to translation problems but lacked strategies to solve them quickly and smoothly. An intermediary position was taken by professionals, who detected translation problems and solved them (in most cases) with care and ease. She also found that investment in time positively influenced translation performance.

There were some differences in these groups' uses of reference materials as well. Interestingly enough, non-professionals consulted reference materials the least often. It is most likely that they were not aware that they would have needed such consultations. In addition, professionals "searched deeper" than students and laymen: they looked up a word or an expression in several dictionaries and handbooks. Finally, non-professionals tended to use the words they found in dictionaries without any deeper reflection on their appropriateness. On the contrary, professionals adjusted or modified the dictionary variants to their interpretation of the text.

Jääskeläinen also examined how social-psychological factors influenced her subjects' behaviour and performance. She found that non-professionals showed several signs of role distancing ('I'm not a translator'-type statements). These statements serve as defence mechanisms for the 'ego' as they are excuses for not performing adequately. However, as such, they may impede effective performance. Furthermore, findings suggest that the

interpretation of the (task) situation and the image the subjects would like to convey of themselves influences both professionals' and non-professionals' translation strategies, and thus, their performance as well.

In the second part of her analysis Jääskeläinen concentrates on mental processes (both cognitive and affective) that cannot be observed directly. She distinguished between marked and unmarked processing and analysed only marked processing. Marked processing was identified on the basis of the following four groups of indicators: utterances concerning

1. translation principles
2. ST processing (linguistic analysis and text comprehension)
3. TT production (drafting and refining)
4. unspecified

Jääskeläinen's results can be summed up as follows: there were more signs of marked processing in the protocols of professionals than in the protocols of non-professionals. Professionals also tended to be engaged in more reflection and metacognitive processing. Non-professionals, on the other hand, seem to be preoccupied with the *linguistic* analysis of the ST. All the translators focused their attention on the production of the TT. The successful translator can be characterized by concentrating on the *interpretation* of the ST and the *refining* of the TT.

As for the affective dimension of processing, Jääskeläinen found that the number of evaluative comments showed a positive relation to performance. Also, positive attitude and commitment to the task usually predicted better performance.

In her article of 1996 Jääskeläinen compared her research results described above to Gerloff's (1988 cited by Jääskeläinen, 1996). Both studies supported Gerloff's statement according to which *translation does not get easier with experience*. The time spent on the translation task, the number of dictionary consultations and the number of processing activities evidenced this statements. All data revealed that professional or high-quality translators devoted a large amount of time and energy to producing the TT. In addition, both studies showed that professional translators did not always prepared the best TTs. Concerning quality Jääskeläinen presumes that success in translation is essentially determined by affective factors including the translator's self-image and self-confidence. In a lengthy discussion on the translator's self-esteem she argues for the deconstruction of the 'optimal translator' whose ideal picture has a negative effect on the translator's self-image and in turn, on his/her performance too.

Jääskeläinen and Tirkkonen-Condit (1991) compared three professionals' and four non-professionals' protocols with the purpose of finding out what processes in translation are liable to get automatized with increasing professionalism. They also wanted to find evidence whether automation takes place during the translation process; in other words, whether there is learning in the sense that elements that are processed consciously at the beginning of translation become automated by the end of the translation process. On the basis of some verbalizations and lack of verbalizations, Jääskeläinen and Tirkkonen-Condit argue that automation largely affects local processes (microstrategies, in Krings' terms), e.g. word-order-rearrangements, but some global processes (e.g. considering the translation brief) become more automatized with experience, too. The authors, however, underline the nature of the translation task (i.e. routine or non-routine task) as a factor influencing the degree of automation. When translating non-routine texts, professionals are likely to resort to conscious processing, too. However, professional translators' conscious processing usually entails different types of problems than that of novices.

Concerning automation *during* translation, Jääskeläinen and Tirkkonen-Condit argue that professionals' decision-making became automatized in their sample during the process while there was no such development in the novice's decision making. They base their claim on the

observation that professionals' verbalizations relating to the translation brief were present at the beginning of the process, but then, decisions were made unconsciously, without any reference to the translation brief. Non-professionals, on the other hand, were explicitly struggling with adjusting the TT to the requirements of the translation brief throughout the whole process. However, we would like to note here that professionals' propensity to act in accordance with the translation assignment without conscious effort can be the result of *preceding* automation, too. *Gradual* decrease in verbalizations would be the best sign of learning and automation in progress. The abrupt disappearance of verbalization suggests that after an orientation phase the appropriate automaton was simply brought into play.

2.5.3.2.2 *Synthesizing and re-interpreting – Sonja Tirkkonen-Condit*

Tirkkonen-Condit's contribution to process research is so extensive that it is nearly impossible to give a summary of it. What makes her work so unique is that she not only publishes her own research results but engages in synthesizing and re-interpreting previous findings, too. In this section, an attempt is made to review Tirkkonen-Condit's most significant studies.

In 1989 Tirkkonen-Condit examined decision-making processes of three translation students. One of the students was in his final year; therefore he was regarded as a professional. Results indicated that the more experienced translator made the most decisions both in absolute and in relative numbers (total number of decisions and time taken to bring a decision, respectively). As for the various types of decisions, it was found that the fifth-year student had only seven planning decisions and they all appeared in the drafting and writing stage. Less experienced students were engaged in planning throughout the whole translation process. Non-linguistic decisions were also overrepresented in the older student's protocol indicating more intensive reliance on extralinguistic knowledge.

Decisions-making was in the focus of another study by *Tirkkonen-Condit (1996)* but this time she gave a summary of what we know about these processes on the basis of TAP studies. She argued that translators usually base their decisions on three types of knowledge: linguistic knowledge, knowledge inferred from the text and extra-textual world knowledge. Professionals were characterized by a strong reliance on *knowledge inferred from the text*, whereas lay subjects tended to adhere to their linguistic knowledge. Furthermore, professionals were found to bring global decisions at an early stage. Local decisions were made at a later stage, and there was a tendency to harmonize local decisions with previous global ones. Professionals seem to have a well-developed procedural knowledge that helps the realization of decisions. They also have an accurate image of the TT they wish to produce which is evidenced by the large number of evaluative statements concerning TT expressions and segments. On the other hand, Tirkkonen-Condit characterizes beginners' procedural knowledge as fragmentary and inarticulate. Often there is an incompatibility of global aims and local decisions. Finally, novices and lays usually adapt a linear approach to translation, while professionals clearly devote more attention to certain points or issues, usually to the most significant ones in the text.

Tirkkonen-Condit and Laukkanen (1996) studied the affective side of decision making in translation, that is, how professional self-image and subjective theories of translation influence the translation process and product. Inferences and conclusions were based on the evaluative statements of the translators. Tirkkonen-Condit and Laukkanen found that a more secure self-image of the translator predicted that he/she was willing to accept the responsibilities of the communicator and break always from the role of a mere 'text processor'. However, it was found that the type of task encountered influences the actual self-image, and thus, the quality of the TT as well. Non-routine tasks can be seen as more

threatening and this may have a negative effect on the translator's performance. The translator's own subjective "translation theory" operates as a guide to her/his actions. This theory usually remains implicit, though there are explicit signs of it in the protocols, e.g. references to the readers or to the text type the translator is working with etc.

In 1997 *Tirkkonen-Condit* re-analysed four previous TAP studies with respect to evaluative statements emerging in it. Drawing on Pym's (1992) definition of translation competence, Tirkkonen-Condit assumed that translation competence or proficiency is closely related to the quantity and quality of evaluative statements produced by the subjects during translation. After analysing the protocols she concluded that proficient translators uttered more TT-related evaluations than non-professionals. In addition, she found that the professionals' evaluations of the TT or the TT versions were more specific than those of laypersons. The linguistic analysis of evaluative statements attested the ambiguous/fuzzy nature of translation. Consequently, Tirkkonen-Condit came to the conclusion that tolerance of ambiguity must be a major requirement of translators. Finally, she observed that "the behaviour of professionals is characterised by greater confidence, responsibility, ethics and positive emotion than of laymen and novices" (Tirkkonen-Condit, 1997; 83).

The issue of ambiguity and its tolerance was picked up again in a research report of 2000, in which Tirkkonen-Condit analysed 20 protocols from four previous studies. She identified conversation styles, processing phenomena and uncertainty management techniques, and drew translator profiles relying on these factors. However, she found that translation processes and uncertainty management were so intertwined that the distinction between the two, and consequently quantitative analysis became impossible.

Within a cognitive framework, Tirkkonen-Condit (2002b) studied the translation of metaphoric expressions. As an outcome of a previous investigation, Mandelblit (1996 cited by Tirkkonen-Condit, 2002b) set up the cognitive translation hypothesis, according to which metaphoric expressions are more difficult to translate if they belong to different cognitive domains in the two languages involved. Increased difficulty results in increased translation time. As Mandelblit's subjects only translated isolated sentences, Tirkkonen-Condit felt the need to test the hypothesis in near-authentic situations, that is, with complete texts accompanied by a translation brief. Two think-aloud experiments with two texts and with altogether 14 subjects were involved in the analysis. The outcomes are not unambiguous: although there is some evidence that translation difficulty depends on the domain similarity of the metaphor, there are some factors mediating this effect. First, it is often difficult to decide whether a certain metaphor belongs to the same domain in the two languages or not, because they may share some features but not others. Second, professional translators usually try to come up with TL solutions that are compatible with the text as a whole. This intention may slow down the translation of apparently simple items, too. As a result, to translate metaphors belonging to the same domain in certain conditions may take as long as translating metaphors with domain conflict. Nevertheless, domain conflict usually trapped the translators in the images of the source language, although there seemed to be individual differences as to how much they could resist the SL. Tirkkonen-Condit concludes that effects of domain conflict prove that translation cannot take place primarily through word association, but there must be a deeper processing (understanding) involved, too.

Interestingly enough, in an article of 2005 she argues that *word-for-word translation* is the default mode of transfer in both professional and non-professional translation processes. At the same time, re-analyzing some previous TAPs, she came to the conclusion that there is one feature definitely characterizing expertise, and it is the ability to evaluate and *monitor* one's own performance. Professionals are thought to possess a more developed and more active monitor that realizes instances when the working of the 'literal automaton' is inadequate. The monitor stops the functioning of this automaton and launches a problem-solving process.

It should be noted that no matter how appealing they are, Tirkkonen-Condit's statements are based on impressionistic observations. She certainly backs her ideas with excerpts from TAPs, but no systematic analysis is carried out in terms of providing exact numbers of processes in experts and novices. Therefore, the monitor model can be seen as yet another hypothesis that needs to be tested in further research.

2.5.3.3 Some further TAP studies

2.5.3.3.1 Studying true professionals – Janet Fraser and Candace Séguinot

Janet Fraser conducted some minor investigations with professional translators and she published her findings in the beginning of the 90s (Fraser, 1993, 1996a, b). As Fraser gives a rather scanty account on her techniques of data collection and analysis, it is very difficult to evaluate her research and her outcomes. However, the comparatively large number of *professional* translators she managed to engage in her study makes her research unique. If her research methods had been more rigorous, she would have had much larger impact on process-oriented translation research.

Twelve community translators formed the sample of her first study (Fraser, 1993) and a technique called immediate retrospection was applied for data collection. The community translators had to translate a local authority leaflet to their mother tongues (Arabic, Bengali, Gujarati etc. Seven languages were involved in the examination). She found that the translators adjusted their strategies to the needs of the community they translated for. Straightforward lexical translations or cultural equivalents were not selected on the basis of some ideology. Translators considered which solution would be best understood by their readers and selected that option.

In the second study (Fraser, 1996a) the community translators' strategies were compared to the strategies of 21 commercial translators who took part in a think-aloud investigation. The community translators translated an article from the education supplement of a French newspaper. Fraser found that there was a fairly wide divergence of strategies even among the same group of translators. She explained this divergence with his subjects' propensity to conform to the actual translation situation and to the readership defined by the translation brief. In addition, translators' strategies were influenced by how they perceived their role as translators: whether they saw themselves as mere informants or as a link between the SC and TC. Fraser stressed repeatedly that the readers' expectations and the translation brief played an important role in directing the translators' actions. One major difference was found between the two professional groups and this concerned the handling of culture-specific concepts. The most common strategy for both groups was to explain the culturally 'distant' term in detail, but they differed to a large extent as to how willing they were to borrow SL terminology for culture-specific expressions. The commercial translators avoided this while the community translators made extensive use of it. This may be explained by the assumption, that community translators had a readership in mind who lived in the SC. As a result, they must have known these concepts and expressions of the SL, but they could not be expected to be familiar with the corresponding terminology in their L1.

In addition, Fraser observed that her subjects had primarily communicative goals in mind and these were reported in the protocols. Linguistic problems were less predominant. This may very well be the characteristic of professional translators. However, as Fraser does not present any quantitative data, it is very difficult to decide whether it is a reliable finding or the mere impression of the researcher. Moreover, as half of the subjects were engaged in retrospective reports, we cannot exclude the possibility that subjects themselves filtered out linguistic problems as less important.

In the third study, Fraser (1996b) compared professionals' and students' translation processes. However, as she had only experts in her sample, the comparison was not based on authentic empirical data, but Fraser contrasted her subjects with the description of students in other studies (e.g. Jääskeläinen, Krings and Tirkkonen-Condit). Her conclusions basically reinforced previous research results.

In an early study, Séguinot (1989) examined the translation process of a professional translator working on a typical task in an administrative setting. The subject was allowed to use reference materials and the session was video-taped. Séguinot found that the translator improved the ST from several aspects (logic, precision, coherence, etc.). In addition, she identified four global strategies that were employed in the translation process:

- translate without interruption as long as possible
- correct surface errors immediately
- leave monitoring for qualitative errors to the re-reading stage
- stay as close to the ST as possible.

The study belongs to the very first ones in process research and is marked with all the weaknesses of a pioneering work: one subject cannot be really regarded as a sample and interpretation is fairly impressionistic. The shortcomings become even more apparent if we compare Séguinot's strategies with Krings' (1986) strategies (see above).

Séguinot (1991), similarly to Klatsmányi (2000) also tried to investigate translation processes on the basis of translation products (TTs), drafts and notes. These studies, however, cannot really be regarded as proper process-oriented investigations. Séguinot's findings relate more to the changes that were made to the first drafts than to *how* these changes were made. Similarly, the analysis shows in what respects students improved by the end of the course but it offers no information on what mental processes had changed in the students' mind.

Asadi and Séguinot (2005) studied translation strategies of nine professional translators acting in a setting similar to their working environment. The subjects were asked to translate for 20 minutes. Meanwhile they had to think aloud and a computer program (Camtasia Studio) recorded every action which took place on the screen during the translation. After the translation sessions, retrospective interviews were conducted. Subjects were allowed to use any on-line resources they normally make use of. Asadi and Séguinot could identify two cognitive styles of production: prospective thinking style and on-screen production.

Prospective thinking style was characterised by large translation units and a tendency to read ahead for comprehension. Subjects adopting this style tended to solve problems and translate mentally *before* typing.

On screen translation consisted of producing lexical items and phrases that followed the structure of the ST, and then rearranging segments to create a more fluent TT. Typing and reading was nearly *simultaneous* in this group, and translation problems were often recognized only after re-reading the first version of the TT.

In addition, the authors could identify certain strategies that can be linked to computer use; as a result, they probably did not exist prior to the computer era. These were the integration of the ST into the translation, using the highlighting tool to bookmark terms for revision or typing on the top of the ST.

Asadi and Séguinot ended up with a conclusion that translator's processes are so unique that it is impossible to fit them into static categories.

2.5.3.3.2 Recent research efforts

In a recent article *Omar Atari* (2005) analysed Saudi students' translation strategies with the help of a method he calls 'dialogue think-aloud method'. Atari's subjects were paired, and then they were instructed to produce a TT individually but were encouraged to interact with

each other during the translation process. Atari accepted Gerloff's (1986) categorization of translation strategies and examined the number and type of strategies used with special attention to the most frequently and less frequently used strategies and substrategies. He found that his subjects made use of all the six strategies proposed by Gerloff. The most frequently used strategies were the *monitoring of ST segments* and the *monitoring of TT segments*. He notes that his subjects were inclined to use substrategies within these categories that concentrated on the word-, morpheme- or phrase-level. The least frequently used strategies were *Inferencing and Reasoning*, *Storage and Retrieval* and *Text Contextualization* with substrategies focusing on the text, the context, world knowledge etc. Atari concludes that his subjects are preoccupied with smaller linguistic units, tend to concentrate on lexical transfer and in general, can be characterized by a bottom-up processing of the ST. On the other hand, they neglect the stylistic and text-type adequacy of the TT. Therefore, Atari suggests translator trainers that they include assignments in the teaching process that force students to consider higher-level factors.

Ronowicz et al. (2005) studied the use of reference materials in translation. Their sample consisted of five novice translators (first-year students), four paraprofessionals (final-year students), who had 90 minutes to translate a 378-word text from 'the Economist' to their mother tongue. Four TLs were involved in the project. The translation task was preceded by a vocabulary test assessing the 'Frequent Lexis Store' (FLS) of the subjects. FLS is a term introduced by Roger Bell (1991) and refers to lexical equivalents that are immediately available in the mental lexicon. The subjects had 7 seconds to retrieve the appropriate L1 words in the vocabulary test.

Results brought evidence that *professionals had more words in their FLS* than para- or non-professionals. We would like to highlight the importance of this finding as it refers to the role of language competence so often neglected in recent translation studies. This result also proves that there can be huge differences in language competence within groups that were supposed to be homogeneous from this point of view (i.e. novice and expert translators).

It was also discovered that novices used dictionaries more often than professionals and paraprofessionals. In addition, the higher the content of the FLS was, the fewer dictionary consultations were needed. A similar connection was observed between FLS and the speed of translation: the larger the FLS, the faster the process.

As for the types of dictionaries, the bilingual dictionary was proved to be the most popular, although professionals and paraprofessionals sometimes used monolingual and specialist dictionaries, too. They were also characterized by a certain distrust of dictionaries, and tended to fine-tune the terms they found there.

Professionals and paraprofessionals also engaged in more editing than novices.

2.5.3.3 Process analysis with the help of computer programs

As we have already referred to it above, dissatisfaction with TA methodology led to triangulation efforts in translation studies. Computer logging has become one of the most important tools in triangulation recently. The most widely used program is probably *Translog*, which was developed by Jakobsen and Schou (Jakobsen, 1999, Jakobsen and Schou, 1999), but there are other programs, like *Proxy* (Tirkkonen-Condit, 2002a) or *CalliFlex* (Day et al., 2006) in use, too. These programs keep a log of every key stroke that is made during the translation process; accordingly, they store information on the different versions, revisions and the temporal aspects of translation (pauses). In this section, some of the most important log-based studies will be presented.

Livjberg and Mees (1999) studied translation students' use of dictionary in L2→L1 translation. Students had to translate a short newspaper article first without a dictionary and

then, at the second stage they could modify their TTs with the help of dictionaries. In addition to recording verbalizations, all the keyboard activities of the students were logged by *Translog*. Analysis was based on the log-files and the TT versions. Results suggest that the first draft of the TT has an astonishing resistance to editing: about 50% of the units verbalized did not change at all from the beginning of the process until the end of it. In addition, although quality improved in line with the time devoted to refining, the authors admitted that the ‘cost-benefit’ relation was not very impressive: a lot of time was required for minor improvements. Nevertheless, the student with the best solution had the longest processing time and the most dictionary consultations.

Dictionaries were used to find unknown words, to check collocations and to avoid false friends. Nonetheless, the researchers warn that students’ dictionary use was often inappropriate. Similarly, students show deficiencies in certain strategies too: e.g. they often have comprehension problems but they make no use of the context to cope with them. On the other hand, they spend a lot of time pondering over problems they have already solved. Livjberg and Mees suggest that both ST reception and the use of dictionaries should be paid more attention to in training.

In another *Translog*-assisted study *Jensen (1999)* studied the effect of time pressure on the translation strategies of two educated laymen and four professionals. One of their most important findings was that young professionals and experienced professionals clearly formed two separate groups. Young professionals were characterized by the highest number of problem-solving activities and editing. The number of coping techniques and dictionary consultations decreased with experience. Non-professionals often fell back on strategies like word-by-word translation, transcoding and omission. In contrast, paraphrasing was the most dominant strategy of professionals who also relied heavily on contextual clues to solve problems. In addition, professionals were fast enough to leave time for revision, when they made a significant amount of editing.

When analysing the same experiment from a different point of view, *Jensen and Jakobsen (2000)* found that time pressure triggered a decrease in problem-solving activity in the revision phase. However, only non-professionals were seriously affected by time-pressure, as a result, no conclusions could be drawn from the study.

Jensen and Jakobsen could not reinforce the assumption either that time pressure would force translators to use coping techniques similar to those in interpreting. Although coping techniques were used extensively, they seem to be brought into play by a combination of time pressure and translation difficulty.

Tanya Haiden (2005) investigated creativity in a *Translog*-supported project. She ‘tested’ three hypotheses on a sample of 40 students. The hypotheses were as follows:

- 1) Longer drafting and revision phases result in better translations.
- 2) The best solution to translation problems are created in the revision phase, whereas the most creative ones can appear any time in the process, but are most likely to occur in the “writing” and revision phase.
- 3) The first solution is the best and the most creative one.

Although *Haiden* declares that the first two hypotheses proved to be at least partly true, some reservations must be expressed about the interpretations of the findings. *Haiden* wished to test hypotheses, but the design of her study does not entirely fit this purpose: hypotheses are *not* stated in a clear and simple form. It is especially apparent in the case of the second hypothesis that could be sub-divided into at least three further hypotheses. Vague formulation makes testing the hypotheses problematical. In addition, although *Haiden* talks about correlation, and evidence for some hypotheses, no statistical analysis was carried out on her numerical data. Mere impression based on looking at the data, does not, however, ensure statistically significant correlations.

Quite the contrary, methodological sophistication is the characteristic of *Dragsted's* (2005) *Translog* study. Dragsted examined how segmentation was influenced by experiences, on the one hand, and by the difficulty of the ST, on the other hand. The sample consisted of six professional translators and six students of translation. They each translated an easy and a difficult text from their mother tongue into their L2. A distinctive feature of the study is that interpretation of the data is based on statistical analysis.

Dragsted found that segment size, production speed and the nature of the translation unit (TU) were all influenced by the difficulty of the text in both groups. Segment size usually became smaller, production speed slower and the nature of the TU simpler. The two groups were, however, not equally affected by the difficulty of the text. The impact was larger on the professional group, who seemed to fall back on novice-like behaviour when faced with a difficult text. Analysis of Variance (ANOVA) was performed to provide statistical evidence for the findings. Differences and effects sizes proved to be statistically significant with one exception, which was the effect of text difficulty on speed with respect to experience. The lack of significance can be attributed to the small sample size.

It is slightly more problematic that Dragsted does not make any reference to the direction of translation in the interpretation of the results. As we have seen, translation strategies can be influenced by the direction of translation (Krings, 1986; Lörcher, 1991). Accordingly, we can assume that segmentation is dependent on it, too.

On the basis of her results, Dragsted identified two types of processing modes: analytic and integrated. *Analytic processing* is put to work when translating *difficult* texts. In addition, novices use it with easy texts, too. Professionals tend to resort to *integrated processing* when dealing with an easy text. Nevertheless, these are only tendencies, and some divergences may occur.

2.5.3.4 Peer translation

As early as in 1988 *Juliane House* criticized think-aloud methodology for being artificial. She went on to suppose that this artificiality forces subjects to “split their thoughts” into private and public ones. She assumed that silences are signs of private thoughts and only public thoughts become vocalized. This means that important thoughts and processes might be censored and kept private. House believed that translating in pairs may help overcome these problems. She hypothesized that peer translation is more natural, and as a result, “will yield richer and more insightful data” (House, 1988, 86). To test her hypothesis, House designed a study in which ten advanced students of English at the University of Hamburg translated a text from German into English (L1→L2). Four students were asked to think aloud while translating, the other students formed (three) pairs and were instructed to cooperate verbally while producing a TT. The sessions lasted 30 minutes and the experimenter left the students unobserved for this period. Most of the subjects could only translate one long and difficult sentence during the thirty minutes

House's most important finding is that the *data from peer translation is richer* than that from the TAPs. She states that 60% of the TAPs consists of long silences and descriptive talk accompanying action (not informative on the translation process). These two features are said to be absent from peer translations. However, we must note here that House does not put forward any numerical data; consequently, her conclusions seem to be based on mere intuition.

House's strongest objection against thinking aloud is that it mainly produces self-observation and self-evaluation instead of introspection. In other words, we get a picture of what the translator is doing and how she/he feels about it, but we never learn *why* he/she is acting that way. Decision making remains un verbalized. House assumes that the lack of verbalization is due to the constraints of the experimental situation (see ‘private and public thoughts’ above).

She calls attention to the large number of monitoring strategies and to the subjects' tendency to focus on lexical problems too.

In contrast, the dialogues of the translating pairs offer explicit identifications of translation problems and discussions on their solutions. The fact that one has to negotiate the final version with another translator causes more problems to crop up and the translators are forced to reflect on their solutions and argue for them. As a result, peer translation data is thought to be richer (again, no numerical data presented!). In addition, the pairs were inclined to pay more attention to grammatical problems than individual translators. House also noted that pairs had to employ 'interactional translation strategies' like cooperation and negotiation strategies to solve problems of working together.

In addition to providing rich data, peer translation has another advantage according to House: it is a stimulating experience and offers possibilities for learning for both partners.

Finally, she noted that on the basis of her data no definite answer could be given on whether TAPs bring too few data because of methodological shortcomings or the richness of data in peer translations is merely *an artefact* (subjects verbalize thoughts they would not in other circumstances).

House's study can be criticized on several points. Jääskeläinen (2000) identified methodological shortcomings in the research. In particular, subjects were neither trained nor given warm-up exercises before the sessions. This may explain long pauses and descriptive utterances in House's think aloud protocols.

The second problem is of theoretical nature. When House supposes that long silences and unreflected decisions in the TAPs are the result of the subjects' reluctance to verbalize their private thoughts, she seems to forget about some of the basic limitations of TAP described already by Ericsson and Simon (1985). According to them, silences can be signs of short term memory overload and unreflected translation mechanisms may refer to automatization.

However, the most significant problem of the research is the lack of a deep analysis of the recorded material. Not only numerical data is not presented but we cannot see any signs of coding and categorizing translation problems, strategies or evaluative statements. As a result, House's conclusions seem impressionistic.

Nevertheless, she has raised important questions that have not been answered ever since. First, there is the question of the richness of data. No comparative study with decent numerical analysis has ever been carried out to discover whether peer translations offer more insight into the cognitive processes of translation than TAPs. In this respect, House's research design was excellent; problems became apparent in data analysis.

The second issue is the cooperative nature of the peer translation task. It is not unreasonable to suppose that the social competence of the subjects and some communication skills related to it highly influence both the translation process and the product. An investigation of this aspect of translation may offer significant insights for social psychologists, sociolinguists and educationalists as well.

From the educationalists' point of view the most important question is whether peer translation is really so motivating and enriching as suggested by House. One-time data collection may offer some information on the temporary effect of working together, but the question whether joint translating contributes to the development of translation competence on the long run is an independent research issue.

We know of only one more research that compared think aloud protocols and joint translation. *Matrat's* study (1992) is reported by Jääskeläinen (1999, 2000). Matrat included four groups of subjects (novices, advanced /2 groups/ and experts) in her experiments. The subjects first had to take part in a think aloud protocol, then each group was instructed to produce a TT together. Different paragraphs of the same text served as STs in the experiment. The text was

difficult, no reference material could be used and there was a time limit for the translation tasks. Matrat's findings were very similar to House's. Problems verbalised in joint translating were more clearly defined and they revealed their complex structure too. Strategic processing was also more easily identifiable in joint translating protocols. However, Matrat could not find any signs of decision-making either in the think-aloud or in the joint translating protocols. Furthermore, Matrat asserted that think-aloud protocols worked best with advanced students.

Jääskeläinen points to several methodological problems in Matrat's study that may have contributed to her results. One major factor is Matrat's strong adherence to Vygotsky's theory. As a result, Matrat not only attempted to reveal differences between the two data collection methods, but also tried to prove Vygotsky's thesis that collaborative work favours the emergence of metacognition. As a result, joint work became the central point of the research. In addition, the boundaries between metacognition and introspection disappeared. These factors resulted in "selective attention" and interpretation of data.

Other minor factors, like the order of the tasks, the difficulty of the text and the time limit might have contributed to the lack of certain strategies or to the superiority of joint translating.

In 1996 *Séguinot* studied two professional translators in their natural environment carrying out a routine task: the translators produced a TT together in their office. Because of the design, the study can be classified as joint translation, however, *Séguinot* did not make any conclusions regarding methodology. As a result of the investigations, *Séguinot* identified four kinds of strategies on the local level: interpersonal, search, inferencing and monitoring. As for the units of translation, comprehension was perceived to proceed sentencewise, but TT production was carried out in smaller units. The progression of the process was described as iterative, that is, non-linear, returning to and repeating certain segments again and again. *Séguinot* found that her subjects were sometimes engaged in searches irrelevant or leading away for the actual translation tasks. She suggested that this is a waste of time. However, similar findings were mentioned by *Krings* (1988) who interpreted his subject's behaviour as effort to broaden his background knowledge.

In her overviews of joint translation studies *Jääskeläinen* (1999, 2000) concluded that background factors should be paid more attention to in these studies because their influence might be so significant that they radically affect research results. She adds that peer translation is not less artificial than thinking aloud as translators usually work alone.

We believe that the overlapping findings in the two major studies (*House* and *Matrat*) on peer translation, that is, the fact that peer translation offered richer and more complex data must be taken seriously. Thinking aloud and pair translation are clearly different situations that prepare different types of challenges for the daring few who embark on these tasks. It is possible that the two techniques produce different sorts of data or that they offer insight into different aspects of processing. In addition, peer translation may deliver interesting information on subjects' social competence and cooperation skills and on how these factors influence performance. As a result, we decided to collect data both by means of thinking aloud and peer translation.

2.5.4 Summary

In this chapter we reviewed TA methodology and a large proportion of process-oriented research in translation studies. While doing so, we focused on research bearing relevance to our own investigation. Accordingly, primarily studies concentrating on translation problems, translation strategies and the use of reference materials were reviewed. In addition, peer translation and computer logging techniques were summarized, as they were employed in the present study, too. We are aware that several investigations (e.g. Gerloff, 1986, Kiraly, 1995, some research reports in Danks et al., 1997 and Alves, 2003b, Breedveld, 2002, Norberg, 2003), were left out of the overview, but the scope of the study did not allow for the inclusion of further, relatively unrelated studies.

As already mentioned, the reviewed research reports form a fairly heterogeneous group: Even researchers claiming to study the same phenomena work from entirely different backgrounds, use different subjects and interpretation methods. To recognize this, it is enough to take a closer look at how diverse phenomena were interpreted as translation strategies by Krings (1986b), Lörcher (1991) and Séguinot (1989). Due to theoretical and methodological abundance and divergence, there is a rapidly growing body of often contradicting findings that cannot be compared or synthesized. Nevertheless, there are recurring themes and outcomes in the investigations on the basis of which some assumptions can be made about the translation process. They can be summarized as follows:

- The translation process is not a uniform phenomenon, whose structure or working can be described unequivocally. Accordingly, the search for an ideal process proved unsuccessful. Several factors, like the difficulty of the text, familiarity with genre and text-type, time pressure, the accessibility of reference materials or the direction of translation bear an influence on the progression of translation. There are also crucial individual differences that are not essentially related to competence differences and they do not necessarily lead to achievement differences either.
- Nevertheless, some strategies and tactics could be identified that seem to be inconvenient for communicative translation, but that are sometimes resorted to in case of difficulty (e.g. translating without understanding, sign-oriented translation, concentrating on small segments etc.). It is important to emphasize that both novices and experts demonstrate these types of behaviour, although on the basis of the data we can hypothesize that non-professionals fall back to such strategies more often.
- Expert behaviour is not uniform either. Some studies demonstrate that professionals can choose from several global and local strategies, too.
- Although professionals are far from being a homogeneous group, they can be clearly distinguished from other laypersons like language learners or bilinguals. Differences emerge in frequent lexis store, speed of translation, unit of translation, and translation strategies, although results are not unambiguous in some respects (see below).
- In certain conditions (non-routine tasks, difficult texts etc.) experts may employ similar strategies as novices. It is not clear whether these strategies prove useful in the hands of experts or not.

At the same time, there are some points on which research results contradict each other:

- Speed of translation as a function of experience (see Krings, 1988 and Jääskeläinen, 1999 as opposed to Ronowicz et al, 2005, Dragsted, 2005)
- Number of translation problems identified and worked on as a function of experience (Krings, 1988 and Jääskeläinen, 1999 vs. Jensen, 1999)

- Number of dictionary consultations as a function of experience (Jääskeläinen, 1999 vs. Ronowicz et al., 2005)
- Acting in accordance with a translation brief as affected by experience (Krings, 1986 vs. Jääskeläinen, 1989)

However, the translation process is so complex and it is influenced by such a multitude of background factors that it may be impossible to give definite answers to these questions. A merit of process-oriented studies is that they shed light on this complexity and help to form more mature views on translation and its sub-processes. A very good example could be the case of word-for-word translation, which was regarded as an inferior strategy employed by non-professionals. Tirkkonen-Condit's (2005) monitor model reflects a more sophisticated point of view, which seeks to integrate literal translation as a strategy into professional behaviour. On the basis of previous results we have no other choice but to do so.

The pressure to produce novel research results often forces scholars to turn to new questions before previous ones have been cleared. This is exactly what is happening in process-oriented translation research. Except for Jääskeläinen's (1999) and Atari's (2005) investigations, there were no initiatives to replicate a previous experiment or to use the categories or the methodological tools and findings of a preceding study. Considering how small samples are in TA research, it seems obvious that studies with a similar framework could contribute to reinforcing earlier results and to gaining a deeper understanding of certain processes instead of only expanding the list of factors we have tentative hypotheses about. Consequently, we decided to base our investigation on Krings' and Jääskeläinen's research. The reasons for selecting these two studies were mainly methodological: among several vague examinations they provided a reliable basis for an empirical inquiry.

2.6 A framework of the present study

As a summary to the theoretical introduction we would like to repeat the most important points and thus, give an outline of the theoretical framework of our study.

The investigation rests on a conception of *translation as a communicative activity*. In this sense, translation is mediating between cultures, and both language learners and professional translators are able to translate, although their mental processes are presumed to diverge.

We relied on *both linguistic and functionalist theories* and concepts when planning and accomplishing our research. Functionalist ideas (translation as communication, translation brief, positive evaluation) were primarily employed in the macro-level of the investigation and linguistic theories were mainly utilized in solving micro-level problems like text-selection and the evaluation of individual TTs.

The multicomponential model of the PACTE research group was accepted as a *translation competence model* serving as a background for our investigations. The advantages of the model included its comprehensiveness, and its operationalizability. The model, is, however, so complex that only certain elements could be examined in our study. These included the bilingual sub-competence, instrumental sub-competence and psycho-physiological sub-competence. It should be noted that the collected data can further be used to shed light on strategic sub-competence and on “knowledge about translation” sub-competence.

As there are several *evaluation methods* in use but they are highly disputed and, as we have referred to it above, seldom verified, we decided to try all three techniques at least in the pilot study. The tested methods were holistic evaluation, error-correction and positive evaluation. Stansfield et al’s (1992) categories were selected for holistic evaluation, Hurtado’s (Martinez Melis and Hurtado Albir, 2001), Sager’s and Kupsch-Losereit’s (1985) classifications of errors were integrated and modified for error detection and Nord’s (1991, 1992a,b, 1996, 1997a,b) categories were employed in positive evaluation.

In our *process-oriented* examination we relied on Krings’ (1986) and Jääskeläinen’s (1999) models as they were found to be the most consistent from a methodological point of view. The think aloud technique was supplemented by computer logging and by interviews to live up to the requirement of triangulation. Pair translations were also carried out to test the differences between the two methods of data collection.

3. THE QUANTITATIVE ASSESSMENT OF NATURAL TRANSLATION COMPETENCE

As already mentioned in *Section 2.4.1* far too little attention has been paid to the quantitative assessment of translation competence. Although qualitative research is much more popular these days in translation studies, we must not forget that small-scale qualitative studies can only serve the purpose of hypothesis formation. In consequence, results of process-oriented research cannot be generalized, no matter, how insightful and appealing they are. It is our strong conviction that qualitative research must be paralleled by quantitative investigations in order to fully understand the formation of translation competence.

3.1 Aims and Objectives

After reviewing the literature several research questions were identified that could only be addressed with the help of a large-scale survey of translation competence. These questions can be reformulated and expressed as aims as follows:

- 1) To find evidence that natural translation competence exists
- 2) To prove that this competence develops as communicative competence grows (though it *cannot* turn into expertise without appropriate training and experience)
- 3) To identify background variables which influence the development and the functioning of natural translation competence.

However, as the methodology of the quantitative assessment of translation competence is just beginning to take shape, a methodological aim including several specific objectives emerged, as well. This aim was:

- 1) To find a valid and reliable method for assessing translation competence

And the specific objectives included:

- The selection of a suitable text
- Devising an appropriate translation brief
- Developing a questionnaire to gather information on factors that could possibly influence student performance
- Identifying the most effective and the most efficient methods for evaluating translations, which, in turn, involved the testing of methods like holistic evaluation, error-counting and positive evaluation.

3.2 Research Design

The following research design was adopted to help reach the aims of the study:

- 1) First, a pilot study was carried out to develop a method for assessing translation competence.
- 2) The method was applied on a large sample.

This section describes the characteristics of the large-scale survey. Details on the pilot study are provided in *Section 3.4*.

Our survey was loosely connected to a foreign language assessment project of the *Research Group of Cognitive abilities /Hungarian Academy of Sciences* working at the *University of Szeged*. As the idea of measuring translation competence was not part of the original project, sampling and data collection techniques were not identical in the two surveys although the foreign language project obviously gave the framework and set the limits for the translation project. This will be described in detail in the following sections.

3.2.1 The subjects

The sample of the study consisted of 502 Hungarian students learning English at school. Students were selected from the original sample of the Foreign Language Project.

316 schools with about 30 000 students in grade 6, 8, 10, and 12 took part in the Foreign Language Project (Csapó, 2001a; Nikolov, 2003). These schools were selected randomly and the sample can be seen as representative for Hungary. However, as the idea of measuring translation competence emerged at a later stage of the project, data collection could only take place in the following school-year which meant that some students were not available any more. More precisely, these were 12th graders, who left school and 8th graders, who changed school between the two data collections.

For the purposes of our study a sample with some hundred students was decided to be sufficient. In consequence, eight primary schools (342 students) and three secondary schools (300 students) were selected to take part in the translation project. The primary schools were located in the following settlements: Budapest, Békéscsaba, Hódmezővásárhely, Kiskunfélegyháza, Ajak, Atkár and Körösladány. The secondary schools were from Kecskemét, Debrecen and Hódmezővásárhely. Finally, 502 of the tests were returned.

The 502 subjects in the sample can be further categorised as follows:

Table 3 Subjects in the 2003 survey

	7 th graders (7 schools)	11 th graders (3 schools)	Total
Boys	119	92	N = 211
Girls	155	136	N = 291
Total	274	228	N = 502

3.2.2 The composition of the sample and the social background of the students

The previous section revealed that there were differences between grade 7 and grade 11 students with regard to settlement-type. This may be paralleled by a difference in the socio-economic status of the students, which, in turn, may interfere with performance indices and other factors. Parents' educational qualifications are shown in Table 4.

Table 4 Highest educational qualifications obtained by parents. Relative frequencies (%)

	primary school completed (8 years)		Vocational school certificate		Maturity exam		College-degree		University degree	
	father	mother	father	mother	father	mother	father	mother	father	mother
Grade 7.	5,6	6	43,4	27,4	26,5	33,3	14,8	24,4	9,7	9
Grade 11.	1,6	1,6	18,3	9,6	37,6	37,8	18,3	33	24,2	18,1

The χ^2 test (see Table 5) confirmed that the distribution of parents' educational qualifications were not similar in the two age groups. In grade 11, parents with higher qualifications were overrepresented, whereas parents in grade 7 could be characterized by lower educational qualifications. This characteristic of the sample must be taken into account when interpreting numerical results of the study.

Table 5 Fathers' and mothers' educational qualifications by age group. Results of the Chi-square test

Parents' educational qualifications	χ^2	P
Fathers' qualification – grade	39,81	<0,001
Mother's qualification – grade	30,31	<0,001

3.2.3 The instruments and data collection

In the framework of the foreign language project the following instruments were used:

- A communicative language test consisting of subtests of L2 writing, reading and listening (see Appendix 1)
- A test of inductive reasoning with three subtests: numerical analogies, verbal analogies, and number series (see Appendix 2)
- A questionnaire gathering information on students' attitudes to school, and to different subjects. This questionnaire was used to collect data on some social background variables of students (parents' qualifications, type of settlement) and on school achievement (grades/marks in different subjects) too (see Appendix 3)
- A questionnaire on attitudes to language learning (see Appendix 4)

The translation competence assessment involved two instruments:

- A translation 'test': the translation of a text with the help of a bilingual (English-Hungarian) dictionary; a translation brief was attached to the task. (see Appendix 5)
- A questionnaire collecting information
 - on students' task perception (how difficult the task was for them, what the major difficulties were),
 - on the use of additional reference material (if they had any ideas what other tools they could have used),
 - on some quantitative indicators of language learning (how long they had been learning English, how many English classes they had a week),
 - on grades in English, Hungarian language and literature at the end of the first semester, and
 - on how often they translated in English lessons (both direction). (see Appendix 6)

Data collection took place in April 2003. Students had to translate the text from English (L2) into Hungarian (L1) with the help of a bilingual dictionary (dictionaries were provided by the schools). Students had 30 minutes to complete the translation and 15 minutes to fill in the questionnaire.

Both the source language text and the questionnaire were tested in a pilot study, which will be described in the next section.

3.4 Developing the translation competence evaluation instrument – the pilot study

3.4.1 Aims and objectives of the pilot study

The aim of the pilot study was to develop a reliable and valid method for evaluating translation competence. The specific objectives included:

- The selection of a suitable source text (ST);
- Devising an appropriate translation brief;
- Developing a questionnaire to find out whether text selection was successful and to gather information on factors that could possibly influence student performance;
- Identifying the most effective and efficient methods for evaluating translations (target texts – TT).

3.4.2 Text selection and the translation brief

Text selection is a critical procedure in the development of the translation ‘test’ as it corresponds to test construction in traditional evaluation situations. Some considerations on text selection were already described in *Sections 2.4.3.6 and 2.4.3.7* but there were some specific factors that had to be taken into account when choosing the text for our large-scale survey. Here follows a short description of the criteria that were applied in the selection process:

- 1) We had to select a *text that was likely to be translated* by a non-professional *in a real-life* situation.

This requirement was closely related to ensuring *validity*. A purpose of our study was to evaluate natural translation competence as a communicative competence. As a result, real life situations in which translation is likely to take place and texts related to them had to be found. This requirement narrowed down the spectrum of texts we could choose from considerably.

Additional support for designing a realistic situation came from contemporary translation theory (see *Section 2.4.3.7*) and from current views on educational evaluation (see e.g. OECD, 2004). Both stress that the nature of the task and its context should be as realistic as possible.

As the real-life-like nature of the translation situation and the text is closely tied up with the translation brief, further considerations are described below.

- 2) **The translation brief:**

Text selection and devising a translation brief are so strongly intertwined that it is impossible to separate them. The two processes happen simultaneously: when we skim texts for selection we also weigh whether we could imagine a situation in which the text would be translated and what the exact instruction would be. No matter how well a text satisfies the criteria mentioned above if it cannot be accompanied by a plausible translation brief, it must be abandoned.

To summarize, we had to find a text that could easily be supplied with a viable translation brief.

- 3) **Complete texts must be selected as ST.**

The requirement of completeness was already discussed in 2.4.3.6. The basic idea is that one cannot translate a text segment properly if one is not provided the whole text. The missing parts of the text may contain important information about content, style, text-type, cohesive devices and function etc. that are kept in secret from the translator and as a result, thwart his or her effort to produce a decent TT.

There are two possible solutions to this problem: we either give a complete text to

translate or we provide the whole text but we only ask students to translate a part of it. In our study, we decided to choose a complete text for the assessment.

4) Length of the text

We had to find a complete text that could be translated by secondary school students within 30-35 minutes. This meant that a short and complete text had to be searched for.

5) Linguistic difficulty

The text had to be not only short and complete, but relatively easy too, because we wanted to assess translation competence and not language competence. This concerns the problem of validity, too. A text with a relatively simple syntax and a basic lexicon was needed. We also wanted to avoid metaphors and 'untranslatable' idioms and phrases though few of them were necessary to differentiate between average and better students.

6) Familiar content

We looked for a text the subject matter of which was familiar for students as we wanted to preclude the possibility that the quality of the TT is not satisfactory because of the lack of world knowledge or some form of specialized knowledge.

7) Text type

Not only content and language but text type had to be relatively simple too, because we wanted to see the degree to which students would succeed and not how they fail. As a result, we decided for an *informative text*, as opposed to more complicated types like e.g. argumentative or persuasive texts. It was supposed that most students had at least met these types of texts even if they had never produced or analyzed them.

The first two criteria were of basic importance so first the situations had to be listed in which a *non-professional* is likely to translate texts from English into Hungarian *in writing*. The intuitive inventory included:

- Letters (both private and business)
- Brochures, booklets, leaflets
- Manuals
- Film and book reviews, previews;
- Forms (e.g. Application forms)
- Short news items

Most of the items were immediately excluded from the list because only adults in a certain profession can be imagined to be given such assignments. No more than two situations were assumed to be more or less realistic for a student: translating a manual (of an equipment bought abroad) for a friend or a relative, or translating something for the school magazine.

After short consideration translating a manual was abandoned for the following reasons:

- a) Manuals use a very *specific language* that can be characterized by a specific vocabulary, by set expressions and the prevalence of certain structures. As a result, the manual as a text type is unlikely to yield information on the subjects' general translation competence: it can be easy for those familiar with this language use (in both languages) but practically impossible to solve for those who have not met these phenomena yet. Secondary school students are expected to belong to the latter group. Choosing a manual would have meant that we run the risk of giving a text that would have not differentiate between students.
- b) Manuals can be very difficult to understand if the equipment is not at hand.
- c) Manuals are not very interesting, particularly not for teenagers, unless it is a manual of a popular object (e.g. a mobile phone or an MP3 player). Manuals of such sophisticated equipment, however, tend to be too long for our purposes.

Translating for the school magazine seemed to be a realistic task because such magazines usually include some pages on movies, concerts, recent releases (CDs, DVDs etc.), pop stars, actors and other popular figures. Choosing a text with a popular teen theme would have had the advantage of being interesting for students, which, we thought, would induce sense-oriented translation as opposed to sign orientation.

After taking into account the criteria above, two texts were chosen from the Internet Movie Database for the pilot study: a short biography of the actress, Milla Jovovich (Appendix 5), and a film preview (The Bourne Identity - Appendix 7). An objective of the pilot study was to decide which film to use in the large-scale survey.

The biography of Milla Jovovich consisted of 170 words (11 of them numbers) and was not so much a coherent text than a list of information on the actress. The main reason for choosing this text was its simplicity: we assumed that both the linguistic elements and the communicative function (introducing someone) are already familiar for beginner language learners. The fragmentary nature of the text was thought to make the text even easier to comprehend because the need to track down and interpret references and other elements ensuring coherence disappeared. Essentially, the text is kept together by Milla's person, who is the (grammatical) subject of every sentence with 2 exceptions (mother and father). Fragmentary texts were also hypothesized to be translated more easily and successfully as the translator does not have to pay so much attention to re-creating cohesion in the TL.

The film preview was not only different in its layout, but represented a different text type too. A film preview does not only inform the reader about the content of a film but it also tries to persuade him/her to watch the movie. As a result, some sophisticated devices are used to raise curiosity and, in the case of this film, tension in the reader. There is also the tendency to obscure certain details to attract people into cinemas. Consequently, to use Swales' terms (1990) both content and formal schemata of the film preview were more complicated than those of the biography. The greatest difficulty lay probably in re-creating the atmosphere of the original preview.

3.4.3 The Questionnaire

Performance indicators clearly cannot provide information on how well certain criteria of text selection were met. The quality of the TT alone says nothing about whether the ST was interesting (and motivating) for the subjects or not. For this reason we decided to devise a questionnaire that tapped these factors.

We also wanted to collect information on some background factors that may have a relation to translation competence and that might influence translation performance.

In consequence, the following information was asked for in the questionnaire:

- Perceived difficulty of the translation task
- Familiarity with the topic of the text
- Interest in the text
- Magazines read regularly
- Previous year's grades in English and Hungarian languages
- Number of years of learning English

The original version of the questionnaire can be found in Appendix 8a and 8b. In the following, individual questions and the rationale behind them will be presented.

Perceived difficulty of the translation task

Students were asked how difficult it was for them to translate the text. They had to indicate their answers on a five-point Likert-scale (Appendix 7, question 1).

The purpose of this question was to find out whether the task was perceived by the students as easy (or as difficult) as we expected. We also assumed that students' task perception may be a background factor that shows interesting relations to performance.

For students who indicated that the task was difficult or very difficult, an open-ended question was included, too. They were asked to specify what caused problems for them (Appendix 8a and 8b, question 2). Originally we thought that answers to this question would provide information on how to modify the text or the circumstances of data collection. At a later stage, it turned out that they offered useful information on some background factors, too.

Familiarity with the topic of the text

We asked students if they had heard about Milla Jovovich before (Appendix 8a, question 3). We wanted to ensure that most of the students were familiar with the person who the text was about. We also planned to examine whether familiarity with the topic of the text had any relation to performance on the translation task.

Students who translated the film preview were asked how often they went to the cinema (Appendix 8b question 4.). They had to underline the phrase that best described them (hardly ever/once in every two or three months/every month or more often).

Interest in the text

Students were asked how interesting the text was for them. Answers were given in a five-point Likert-scale format (Appendix 8a question 4, and Appendix 8b. question 3). Again, we searched for evidence that the text was interesting and motivating for students. We hoped that this induced communicative translation rather than simple "transcoding". On the other hand, we wanted to see whether interest in the text had any effects on translation performance.

Magazines read regularly

Eleven magazines were listed on the questionnaire, and students had to indicate how often they read each (never/seldom/often/regularly). Students had the opportunity to complete the list with their own choices and to indicate how often they read that magazine (or those magazines). The magazines on the list were the most popular Hungarian youth magazines (3), women's magazines (5) and political magazines (3) (Appendix 8a. question 5).

Data on reading habits was gathered to discover whether they were related to translation performance. We hypothesized that reading magazines that often include biographies of celebrities (i.e. youth and women magazines) might be helpful in forming the target text.

The Bourne Identity Questionnaire asked students whether they read film previews (never/sometimes/regularly), and if so, what their source was. (Appendix 8b. question 5).

Number of years of learning English

Students were asked how long they had been learning English (Appendix 8a. and 8b, question 6), as this factor was supposed to effect their English language skills, and accordingly translation competence too.

Previous year's grades in English and Hungarian languages

This information was interpreted as rough indicators of their language skills (both English and Hungarian) and thus, as background variables of translation competence. (Appendix 8a. and 8b, question 7).

3.4.4 Data collection

Data collection took place in a prestigious grammar school of a Hungarian small town in September 2002. Students had to translate the texts from English (L2) into Hungarian (L1) with the help of a bilingual dictionary (dictionaries were provided by the school).

The biography of Milla Jovovich was translated by $n = 26$ 11th grade students and by $n = 17$ 9th grade students.

The film preview (The Bourne Identity) was translated by $n = 9$ 10th grade students.

Students had to complete the translation *and* fill in the questionnaire within 45 minutes.

3.4.5 Methods for the evaluation of target texts

For the purpose of identifying reliable and efficient means for the evaluation of the target texts, we decided to test all known methods of translation evaluation. In the pilot study only one rater, the author evaluated the translations.

The holistic evaluation comprised the subjective impressions of the evaluator on the following dimensions:

- overall impression
- accuracy of information transfer
- Expression of target text (that is, how well-formed the TT is)

These dimensions were formed on the basis of Stanfield et al's (1992) work and were evaluated on a five-point scale.

After reading some TTs another dimension was added, that of originality, as the evaluator had the impression that some translations were characterized by original ideas and solutions although they were not always correct or stylistically appropriate. On the other hand, some translations were good on every dimension, but were still lacking originality. Originality was assessed on a three-point-scale.

During the pilot study descriptors were developed for all dimensions of holistic evaluation (Appendix 9). These descriptors were then applied in the large-scale survey.

Both types of *analytical evaluation*, that is error analysis and positive evaluation were carried out, but only in the case of the Jovovich biography. The reason for this was that an initial evaluation revealed that the film preview was too difficult for the students and there was no point in wasting energy and time on the meticulous task of scrutinizing these translations in detail.

Error analysis in translation evaluation entails the identification of translation errors, their categorization and counting the raw number of errors. In our study we adapted, integrated and modified Hurtado Albir's (Hurtado, 1995; 1999; Martinez Melis and Hurtado Albir, 2001), Sager's (1983) and Kupsch-Losereit's (1985) categories. Finally, we distinguished two groups of errors: *source text related errors* (with further subcategories: opposite meaning, false information, no sense, addition, omission, unresolved extralinguistic reference) and *target text related errors* (spelling, grammar, lexical, textual, stylistic).

As described in *Section 2.4.3.10*, positive evaluation means that we identify different types of translation problems in the text and then check the solution of these problems (1-0 points). Pre-defining translation problems for the text proved to be more difficult than expected. To ensure validity, the author and two other professors (one from the English Department of the Teacher Training Institute of the University of Szeged and one from the Language Centre of the University of Szeged) developed a list of possible problems individually. Then the lists were combined to form an agreed-on inventory of problems. However, when correction began, it turned out that the list was too short and it did not reflect students' achievement. As

a result, target texts were scrutinized for typical problems and the list was modified once again. Items in the problem-test used in the pilot study are listed in Appendix 10.

We regarded translation problems as items on a test, and each correct solution scored a point. As a result, we could perform item-analysis on the “test”, and could modify it accordingly.

3.4.6 Analysis

Quantitative data was analyzed using SPSS v. 9.0. In addition, based on the evaluator’s observation some qualitative analysis was carried out.

Analysis embraced the following issues:

- students’ performance (descriptive analysis);
- the relationship between performance and some background factors;
- The evaluation methods (based on descriptive statistics and qualitative analysis)

3.4.7 Results

After a brief initial appraisal of the translations (TTs) we decided to evaluate only the Milla Jovovich biography in detail for the following reasons. It was obvious at first glance that the film preview was too difficult for the students. No one of the nine students could finish his or her translation although one of the students had only half a sentence missing. The text consisted of 164 words, and a student could translate 110,89 words (std. dev. = 20,84) on the average, that is, about the two thirds of the whole text. Taking these figures into account it is no wonder that it is hard to call these translations “target texts” at all. Most students had problems understanding the source text, which is reflected in their translations: their productions are full of ill-formed and sometimes even garbled sentences indicating sign-oriented strategies (Lörscher, 1996; Risku, 1998). Two short excerpts from translation are presented below:

“Egy viharos éjjel egy fiatalember kiesett a Mediterrán-tengerre a halászhajóval és annak legénységével.”

“Azt hitték a fiatalember halott, mert a kíváncsi halásznál kés volt []”

English words are sometimes transposed into Hungarian without any formal changes (e.g. Mediterranean, Swiss bank, Embassy) etc. Not even mere information-transfer was successful in these translations (except for the only nearly complete TT), not to mention the stylistic requirements of a film preview. It was clear that the text was so difficult that it could not differentiate between students.

The fact that some translation errors clearly indicated reading skills problems, also suggested that the text was too difficult for translation purposes.

Our decision was supported by students’ reaction to the texts, too: whereas the Milla Jovovich biography was rated easy to medium difficulty (mean = 2,48, std. dev = 0,67), the film preview was perceived to be more difficult (mean = 3,11, std. dev = 0,78). It is astonishing, however, how much students underestimated the difficulty of both translation tasks. This is a consistent finding and will be discussed later in detail.

3.4.7.1 Evaluation methods

In this section we analyze evaluation methods. We take into account their strengths and weaknesses, select the ones most appropriate for the large-scale study and give reasons for selection.

To assess evaluation methods correlations of performance indices were computed (see Table 6).

Table 6 Correlations of performance indices (Spearman rho)

	Overall impression	info transfer	Express.	Origin.	ST errors	TT errors	Total errors	Test total
Overall impression	1.000	0.86**	0.89**	0.48**	-0.45**	-0.21	-0.49**	0.88**
info transfer		1.00	0.79**	0.41**	-0.49**	-0.56	-0.39**	0.81**
Expression			1.00	0.44**	-0.41**	-0.24	-0.49**	0.83**
Originality				1.00	-0,06	-0,26	-0,26	0,60**
ST errors					1.00	-0,15	0,56**	-0,46**
TT errors						1.00	0,72**	-0,21
Total errors							1.00	-0,50**
Test total								1.00

** p<0.01; * p<0.05 level

Holistic evaluation

Correlation *between holistic dimensions* ranges from moderate to strong, indicating that they refer to different aspects of the same construct. The dimension that seems to be more independent of the others is originality. This is reflected in lower correlation coefficients.

As Table 6 shows, ‘overall impression’, ‘information transfer’ and ‘expression’ correlate moderately with *most other scores* (errors and ‘problem test’ scores) demonstrating that holistic evaluation provides information on the same construct (translation competence) as analytic approaches. The only exception is Target Text Errors: no significant correlation can be found between target text errors and the three dimensions of holistic evaluation mentioned above. As this seems to be a problem of TT error-counting, we will discuss it later.

We could also observe that ‘Originality’ showed no correlation with error numbers. Though the results were not significant, they seem to assert a suspected assumption: A translation might be original, but still full of mistakes.

In sum, holistic evaluation proved to be a valid method to assess translations – its dimensions are inter-related, and they are related to other indicators of translation performance. In addition, holistic evaluation has some advantages: it is the only way to express the qualities of the target text *as a whole*. Neither error-counting nor positive evaluation can account for cases where we have the impression that we have a good TT text, though there are some errors in it. It also offers the possibility to take into account dimensions that analytic strategies miss (e.g. originality). Its disadvantage is its subjectivity, which makes reliability questionable. As a result, it should only be used with at least two evaluators. A further requirement is to provide the evaluators level descriptors to ensure that they evaluate the same dimensions.

Analytic evaluation

Error analysis

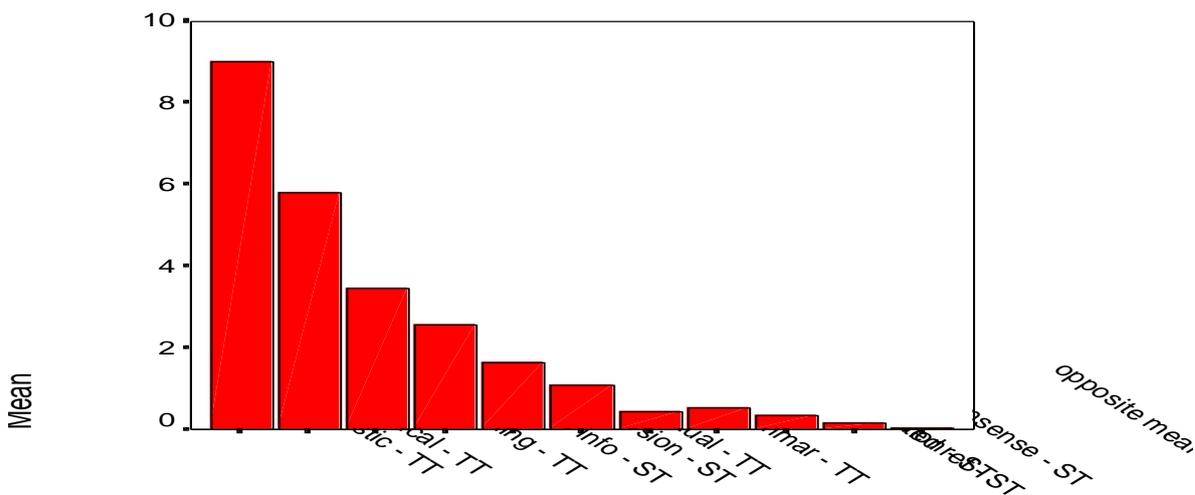
As Table 6 shows *source text (ST) errors* correlate moderately with most other indices and correlations are significant.

Target text (TT) errors, however, correlate only with the total number of errors. This signifies a certain tendency: **error-analysis is more sensitive to the qualities of the target text** than the other methods.

Detailed error-analysis

The most apparent finding, again, is that TT errors (mean=19.53) are more frequent than ST errors (8.19); ($t = -12,06$, $p < 0.01$). More specifically, the most frequent error types are stylistic (TT, mean = 9.02); lexical (TT- 5.79); spelling (TT – 3.44); false information (ST – 2.56) and omission (ST – 1.63) (see Figure 3).

Figure 3 Most frequent error-types in students' translations



There are several plausible explanations for the prevalence of TT errors in our study: it is possible that language learners are *not aware* of how important the form of the TT is. This is suggested by the results of the large-scale survey, too, as a result it will be discussed in *Section 3.5.3.3* in more detail.

Another possibility is that the text was easy enough to understand and this understanding is reflected in the low number of ST errors. However, the subjects did not have any time and energy left to produce a well-formed TT.

The difference between the two explanations is that in the first case, we assume that the subjects do *not want* to refine their TT whereas in the second case, we assume that they *cannot* refine the TT because of missing capacity. Of course, it is highly probable, that these two factors operate simultaneously. It is only process-oriented research that can give more definite answers to these types of questions.

It is interesting to note, that some other research (e.g. Harris, 1977; Lörcher, 1991b) suggest too that natural translation is chiefly characterized by the dominance of information transfer over TL form.

There are some other minor findings we must refer to here. First, the categories of 'opposite meaning' (only 1 instance of error) and 'nonsense' (6 instances) seemed to be superfluous. We suggest that in this study they could have been merged into 'false information transfer'. However, it is obvious that another text and/or another sample would not necessarily allow for such modification in the system. The main point here is that although we may assume the existence of universal error categories, in a real evaluation situation there can be a high

fluctuation of their occurrence. In consequence, error categories must probably be re-defined in each evaluation situation to ensure efficiency.

Another interesting result is the relatively low number of text-level errors (47 in the whole sample). This is an astonishing finding if we take into account that the handling of text-level problems is usually regarded to be a sophisticated skill that appears comparatively late in the development of translation competence (Campbell, 1998). Nevertheless, if we recall a major characteristic of the source text, that is, the fact that hardly any cohesive devices were used in it, the low number is not that surprising at all: students had no opportunity to make mistakes. This draws our attention to the fact that not only error categories but the interpretation of errors is highly dependent on both the text type and the sample.

To sum up the advantage of error analysis is that it gives a more detailed picture of students' translation competence. Error analysis is indispensable in translator training and in formative evaluation though it must be used with caution because of its negative orientation (Pym, 1992; Klaudy, 1996; McAlaister, 2000).

However, it has certain drawbacks that make its application in large scale summative surveys at least questionable. We have not touched upon a major problem, yet. It is the fact that error analysis *cannot account for untranslated sentences or sentence segments*. It is impossible to tell how many mistakes a TL sentence would contain if it were translated, not to mention text-level errors.

As we have seen, error categories must always be re-defined according to the text and the sample. This means that necessary arrangements for a decent error analysis are more complicated than it is usually assumed. Moreover, no matter, how well error categories are defined it is often very difficult to decide which category an error belongs to. This can be demonstrated on incorrect word choice: in most cases, incorrect word choice is obviously a TT lexical error, but sometimes it results in or originates in an ST error, that is false information transfer.

Moreover, it is widely accepted that error evaluation also entails a subjective element (Waddington, 2001; Martinez Melis & Hurtado Albir, 2001). Two evaluators may disagree on whether a certain linguistic unit is an error and if so, what kind of error it is. This means, that the involvement of two evaluators cannot be spared in error analysis either. This, however, seriously endangers the ecological validity of the method, particularly if we take into account how time- and energy-consuming it is. Further, if we consider that the total number of errors is greatly influenced by TT errors and that TT errors are unrelated to all other dimensions of translation competence (in our study), then the value and the efficiency of error analysis becomes highly questionable.

A further shortcoming of error analysis is its negative orientation already mentioned above. From the evaluator's point of view this means that errors give information on what students do *not* know in a certain context. Developmental studies are as much as interested in what subjects can already perform and this can easily remain undetected under the raw number of some sort of errors.

The final objection against error analysis is that it 'misses the wood for the trees'. A large number of (often target text!) errors may hide a good and original translation. Especially, if mistakes are easy to correct, one has the impression that error numbers give a distorted picture of the *text as a whole*, often losing its virtues from sight and underlining its weaknesses. But the opposite is also possible: a dull translation may be short of errors. It can be argued that the contradiction between impressions and error numbers comes from imperfect error category definitions. Nevertheless, as long as we do not have the means how to grasp qualities of the text as a whole in its parts, the application of an analytic method is open to discussion.

Because of its drawbacks and the inefficiency coupled with it we decided not to carry out error analysis in the large scale survey.

Positive evaluation

As already mentioned above initially 34 translation problems were selected based on a linguistic analysis of the text and on predictions of students' translation competence. Translation problems were regarded as items on a test and each correct solution scored a point.

The original test of 34 items had a relatively low reliability (0,76), which indicated that the test needed modifying. However, as the sample was rather small, it looked unreasonable to decide for the final form of the test. Nevertheless, on the basis of the pilot study some minor modifications were carried out on the test. Some obviously unreliable items were deleted and two lexical items were added to the list. Both items were perceived by the rater to cause problems for students. The modified problem list can be seen in Appendix 11.

Positive evaluation was decided to be tested in the large-scale survey because of its advantages which include positive orientation. Positive evaluation informs us on what students know. Consequently, an adequate choice of items enables diagnosis. In addition, once items are defined and characterized clearly, target texts can be corrected quickly and easily. If items are distributed evenly, the test score will reflect the proportion of untranslated texts segments too. Another benefit of positive evaluation is that test scores lend themselves easily to further statistical analysis.

3.4.7.2 Student performance in the pilot study

Table 7 shows the means, the standard deviation and the mean difference of grade 9 and grade 11 students' performance by the different evaluation methods. As can be seen, holistic and positive evaluation proved the superior performance of grade 11 students. Similarly, the number of source-text errors diminished from grade 9 to grade 11.

Interestingly enough, the number of target-text errors grew from grade 9 to grade 11, although the difference between the two age-groups was not significant. An explanation for this might be found in the number of translated sentences (see Table 8). While most grade 11 students translated the whole text, grade 9 students left a mean of 5,76 sentences untranslated and the difference between the two age groups was significant. As older students produced more sentences, they had more opportunity to make mistakes. The question arises why source text errors diminished then? A plausible explanation is that information transfer develops rapidly between the two age groups in the sample, while target text expression cannot keep up with this fast development.

Table 7 Means, standard deviations and mean difference of grade 9 and grade 11 students' performance according to different evaluation methods. * = mean differences are significant at a $p < 0,01$ level (independent samples t-test)

	Grade 9 (n=17)		Grade 11 (n=26)		F(p)	t(p)	Mean differences
	Mean	SD	Mean	SD			
Overall impression	1,53	0,80	3,15	0,97	0,69 (0,41)	-5,75 (<0,001)	1,62*
Information transfer	1,53	0,72	3,77	0,91	0,81 (0,37)	-8,56 (<0,001)	2,24*
Expression	1,47	0,62	2,81	0,98	4,96 (0,03)	-5,46 (<0,001)	1,34*
Originality	1,06	0,24	1,5	0,76	30,19 (0,01)	-2,75 (<0,01)	0,44*
ST errors	10,59	3,68	6,62	2,8	0,01(0,91)	4,01 (<0,001)	-3,97*
TT errors	18,88	5,07	19,96	3,92	2,65 (0,11)	-0,79 (=0,44)	1,08
Total number of errors	29,47	6,27	26,58	4,25	1,46 (0,24)	1,81 (=0,08)	-2,89
problems' test total score	2,11	1,58	7,46	3,42	7,08 (0,01)	-6,53 (<0,001)	5,04*

The total number of errors showed no significant differences between the two age groups. This was probably the effect of the problem caused by TT errors. The finding that the total number of errors and target text errors could not differentiate between grade 9 and grade 11 students contributed to a large extent to our decision not to apply error-counting in the large-scale survey. This is a point where error-counting's failure to account for untranslated text-segments became most obvious.

Table 8 The difference between the number of untranslated sentences by age group

	Grade 9 (n=17)		Grade 11 (n=26)		F(p)	t(p)
	Mean	SD	Mean	SD		
Number of untranslated sentences	5,76	3,01	1,15	2,03	0,61 (0,44)	6,00 (<0,001)

3.4.7.3 Questionnaire

The aim of the questionnaire was to check whether text selection was appropriate and to gather some background information on students. The questionnaire provided a large amount of useful information. Here we will concentrate on data that have direct relevance to text selection and that showed remarkable and significant correlations with other factors.

First, means and standard deviation were computed for the following variables: perceived difficulty of the translation task, familiarity with the topic, interest in the text. Results are shown in Table 9.

Table 9 Perceived difficulty, familiarity with topic and interest in the text. Means and standard deviations

<i>N=41</i>	Mean	SD
Perceived difficulty	2,48	0,67
Familiarity with topic	0,86	0,35
Interest in the text	3,24	0,8

Students judged our source text somewhat easier than an average translation task (see Table 9). This was compatible with our intention not to give too difficult texts to translate. In addition, this mean of 2,48 reflected both 11th and 9th grade students view, and we know that the latter group performed rather poorly on the task, thus, there was no reason to change the source text to a more difficult one.

Results confirmed that about 86 % of the students had already heard about Milla Jovovich before (see Table 9). This means that the topic of the text was not unknown to students and thus, it is not very likely that it would have hindered translation. In consequence, the question was left out from the final version of the questionnaire.

Students found the text slightly more interesting than an average text (see Table 9). As a result, it was concluded that the text is motivating enough to be included in the experiment.

Factors causing problems during translation

The questionnaire included an open-ended question that tried to detect what caused problems for the students during the translation. On the one hand, we wanted to see whether there were any unforeseen difficulties that would have got in the way of the successful completion of the translation task. On the other hand, we were interested what types of problems students became aware of while translating. Students' answers are summarized in Table 10.

Table 10 Problems encountered during translation (n =42)

	Number of cases	Relative frequency (%)
No answer or no problem	23	55,8
Too many unknown words	6	14
Too many technical terms	1	2,3
Too many unknown phrases	1	2,3
To find the appropriate TL word	2	4,7
To write a text that can be published, journalistic style	3	7,0
Unskilled in using dictionary	2	4,6
Not enough time	4	9,3

As can be seen, most problems students indicated were of lexical nature, although stylistic and technical problems were also mentioned. On the basis of students' answers we could conclude that the translation of the text did not cause any unforeseen difficulties (i.e. no additional equipment or information were asked for).

Relying on students' answers we could also develop some more specific, closed-format questions for the final version of the questionnaire. The problems indicated by the students were all included in the questionnaire, but they were completed by questions relating to syntactic difficulties and world knowledge. Questions in the final version of the questionnaire were divided into three groups: there was a set of questions relating to understanding the ST, another one to formulating the TT, and the third one that was associated with some other aspects of translation (see Appendix 6).

Reading magazines

Students were asked whether they read Hungarian magazines regularly, and if so which ones they read, because we assumed that familiarity with the target text-type might have influenced the formation of the target text positively. As we will see in the next paragraphs, this assumption was not confirmed by the pilot study.

Of the 11 magazines listed, only the regular reading of five showed significant correlations with performance indices (see Table 11)

Table 11 Relationship of reading magazines regularly and performance indices (only significant correlations) (n=41)

	Accuracy of info transfer	ST errors	Test total score
Bravo (Youth magazine)		-0.34*	
Story (Women's Magazine)		-0.37*	
Nőklapja (Women's Magazine)			0,32*
Heti Válasz (Political Magazine)		-0.35*	
Magyar Narancs (PM)	0.32*		

*p< 0,05

Furthermore, two of the magazines in Table 11 are of political orientation, as a result, they cannot offer experience in the text-type represented by the source text. Perhaps the most

puzzling finding is that *source text related processes* seem to be more closely linked to reading some magazines than target-text production.

In the next step magazines were grouped according to their orientations: the variables ‘youth, women’s and political magazines’ were formed. Correlations were computed again (Table 12), and this time we found that only reading women’s magazines was associated with some performance indices. It is somewhat surprising that reading youth magazines did not produce any significant correlations. It can partly be explained by the small sample, but it also indicates the complex nature of the problem. It looks as if reading the same type of text that appears in the translation task is in itself not a good indicator of translation performance. Both reading habits and translation performance are related to several other factors therefore it is very difficult to pinpoint direct relationships between them.

Table 12 Relationship of reading magazines with different orientations and performance indices. * p<0,05

	Overall impression	Information transfer	Expression	Origin.	ST errors	TT errors	Total errors	Total test
Youth magazines	0,22	0,13	0,17	-0,4	-0,19	-0,07	-0,18	0,15
Women’s magazines	0,26	0,28	0,21	-0,04	-0,37*	-0,07	-0,31*	0,38*
Political magazines	0,03	0,12	0,01	0,24	-0,14	-0,10	-0,13	0,10
Reading magazines	0,23	0,20	0,20	0,13	-0,19	-0,26	-0,01	0,24

Finally, a cumulated index of reading any kinds of magazines was formed and its relationship to performance indices was analysed again. No significant correlations were found this time.

In summary, correlations indicated that *information transfer* benefits slightly more from reading magazines than other aspects of translation performance. This is somewhat surprising but not illogical. It is possible that regularly reading any sorts of magazines even in the mother tongue (or TL) has a positive influence on reading skills in the TL, which is then transferred to the SL and thus, has a positive effect on the understanding of the source text. Another plausible explanation is that those who read magazines at this age possess highly developed reading skills in general, and this is reflected in their information-transfer performance.

As for the lack of relation between performance and reading youth magazines, there are also several explanations. Texts in youth magazines may be less demanding than in women’s magazines or in political magazines, which results in less gain in reading skills. We must not forget, however, that we did not examine reading habits by age groups as the sample did not allow that. However, it is not unlikely that in the mixed sample the readers of youth magazines are primarily of the younger generation. In this case, other background factors like age, second and first language skills etc. may distort the effect of reading.

To sum up, findings did not support the hypothesis that reading magazines regularly (in Hungarian) would positively influence TT production through familiarity with topic, text-type, style etc.

The question on reading habits raised further questions rather than giving definite answers. The issue proved to be more complex than what we could have handled within the framework of the present research. As a result, the question on reading habits was abandoned. Nevertheless, this is an issue of high priority in translation competence research and definitely would deserve an independent research of its own.

Background factors related to language learning

Background factors related to language learning brought interesting results. On the one hand, *translation performance* was *not related to how long* the students had been learning English at the time of data collection (see Table 13). On the other hand, *both* source language and target language skills correlated with translation performance. As the sample was small, we did not want to draw premature conclusions but decided to keep the questions for the large scale survey too and explain findings there if necessary.

Table 13 Significant correlations between some background factors and translation performance indices. (n= 40) Spearman rho. ** p < 0.01; * p < 0.05

	Overall impression	Info transfer	Expression	Originality	Total number of errors	ST errors	TT errors	Problem test total score
Length of exposure	0,15	0,15	0,13	0,01	0,02	-0,10	-0,02	0,11
Hungarian language	0.42**	0.49**	0.41**	0.40*	-0.34**	-0,15	-0,27	0.53**
Hungarian literature	0,23	0,22	0,26	0,27	-0,22	0,02	-0,29	0,25
English	0.60**	0.69**	0.55**	0.43**	-0.35*	-0.35*	0,17	0.64**

3.4.8 Conclusions of the pilot study

Text selection

Students could not cope with the film preview, hence Milla Jovovich's biography was selected for the large scale survey. Students' performance scores showed that this text is suitable for assessment purposes. However, some problems became apparent too. The text was too long for grade 9 students, many of them could not finish their translations. On the other hand, the small number of text-level errors and the difficulty to define text-level translation problems for the 'problem test' indicated that the text is not suitable for assessing certain dimensions of translation competence (i.e. handling text-level problems). As solving text-level problems is thought belong to 'higher-order' translation skills (Campbell, 1998) it can be assumed that the text will not differentiate above a certain level. However, for our purposes, that is, to assess language learners' translation competence it is completely adequate.

Evaluation methods

Although error-counting has certain advantages it was abandoned for several reasons. Its failure to handle untranslated segments results in a severe defect: *it cannot reliably show performance differences in language learners*. In addition, it is extremely time- and energy-consuming, which hinders its application as a complementary method to holistic approaches in case of large-scale surveys. As a result, we decided to apply holistic evaluation combined with positive evaluation in the large scale study. Difficulties with designing the problem test persuaded us to start out with as many as 30 items, and decide for the final version of the test on the basis of the results.

Performance

11th-grade students showed better performance than 9th-grade students but we cannot tell whether this is the result of maturation, growing language competence and/or growing translation competence (or all of them).

Questionnaire

The questionnaire proved that the selected text was moderately difficult and interesting for students.

Surprisingly, reading youth magazines did not have a positive influence on target text production. The issue of reading abilities and habits and their relationship with translation competence turned out to be too complex to be included in our study.

On the other hand, some of the findings of the questionnaire (problems encountered, factors related to language learning, grades in English and Hungarian) were so interesting that we decided to use the questionnaire in the main survey too. On the basis of students' replies some modifications were made to the questionnaire. Its final form can be seen in Appendix 6.

3.5 Results of the large-scale survey

3.5.1 Methods of evaluation

Relying on the results of the pilot study we decided to apply holistic evaluation and positive evaluation in the large-scale survey. Holistic evaluation involved assessing performance on the dimensions of “overall impression”, “information transfer” “expression” and “originality”. Positive evaluation was carried out with 30 items. All the translations were evaluated by two raters. Altogether 5 raters participated in the project. One of them was the author, two other ones were professors of English who were or had been involved in teaching translation. Two freshly graduated translators also helped with correcting the translations. The raters took part in an approximately 30 minute consultation, where evaluation methods and dimensions were explained and possible solutions and problems of the positive evaluation items were discussed. Descriptors for holistic evaluation and a detailed description of the translation problems were provided in print (see Appendix 9).

3.5.2 Psychometric properties of the translation ‘test’

3.5.2.1 Holistic evaluation

Validity

Regarding holistic evaluation the question emerges whether the evaluation dimensions used are each independent aspects of translation performance. To examine this, we calculated correlation coefficients between the dimensions. Correlation coefficients are presented in Table 14.

Table 14 correlation of holistic evaluation dimensions, Grade 7 (n= 269; upper right half of the table) and Grade 9 (n = 225; lower left half of the table)

	Overall impression	Information	expression	originality
Overall impression	1.00	.94	.89	.52
Information	.84	1.00	.86	.50
Expression	.75	.58	1.00	.55
Originality	.43	.32	.42	1.00

Spearman correlation coefficients, all correlations are significant at the $p < 0.01$ level

Table 14 reveals that the dimensions are not equally useful and justifiable in grade 7 and grade 11. Correlation coefficients are much higher in the case of year 7 students. In fact, correlation coefficients between overall impression, information transfer and expression are so high that it can be questioned whether these dimensions are independent aspects of their own right. Particularly, overall impression and information transfer are so closely related (.94) that one cannot escape the assumption that overall impression of the evaluators was mostly driven by how well the students managed to convey the information contained in the text.

There is a surprisingly high correlation between information transfer and expression (.86), too. There is the possibility that the raters were unable to distinguish between dimensions of information transfer and expression. As a result, we might question the validity of these categories. However, the correlation between the same dimensions in grade eleven is much lower (.58), which – in spite of the values in grade 7 - justifies the use of these categories.

In summary, these results imply a more cautious use of the evaluation dimensions of Stansfield et al (1992). It looks as if it were impossible in certain cases to distinguish between overall impression, information transfer and expression (see grade 7). This finding suggests

that the use of some categories might be superfluous with certain samples, thus, it can put unnecessary extra workload on raters. In sum, it is not parsimonious in certain cases. Age-specific results show that it is mainly the younger, that is, the linguistically less competent group where information transfer and expression cannot be differentiated. It is, however, very difficult to make recommendations which age or language ability groups simplified or modified evaluation could be used with, because the difficulty of the text can clearly influence translation performance.

In case of the younger age group, there is the possibility that they are at a developmental level where information transfer and expression is not yet differentiated. This possibility will be discussed below in the chapter on the development of translation competence.

Correlation coefficients of the grade-11 sample conform to our expectations. They are neither too strong, nor too weak; as a result, they suggest that the evaluation dimensions are related but independent aspects of the same phenomenon.

The dimension of originality, however, shows a clear divergence from the other factors. It is much less interrelated with them, implying that it might be an associated but not a central dimension is translation evaluation. Originality displays the highest correlation with ‘expression’, which is reasonable as it is a quality bound to the target language text.

Interrater reliability

As the evaluation of translations, whether holistic or analytical, always contains a subjective element, it is vital to check inter-rater reliability to ensure that raters adhere to the descriptors of the dimensions. Interrater reliabilities for the *holistic dimensions* are shown in Table 15.

Table 15 Interrater reliability of the holistic dimensions (Spearman’s rho; n = 498); all correlations are significant at the p<0.001 level

Overall impression	Information transfer	Expression	Originality
0,80	0,82	0,73	0,41

Table 15 shows that with the exception of originality the interrater reliability estimates of the holistic dimensions are fairly high. This result replicates Stanfield et al’s findings and challenges all the views that question the mere possibility of evaluating translations on the grounds that they are a matter of taste, and as such, too subjective. In fact, it is not unusual to find lower interrater reliability values in such established fields of evaluation or psychometrics as the assessment of writing skills (e.g. Kádárné, 1990; Molnár, 2003) or psycholinguistic research (Macizo and Bajo, 2006). The threshold of acceptable interrater reliability values cannot be defined exactly. Individual studies usually rely on tradition in their own field to determine it. The values of the present study are comparable to values of other educational and psychological research (e.g. Józsa, 2007).

Nevertheless, interrater reliability of ‘originality’ was regarded to be relatively low. This was coupled with its relative independence of the other dimensions (see above) which led us to exclude originality from further statistical analysis.

3.5.2.2 Positive evaluation

Although positive evaluation seems to be a widespread strategy used in many institutions teaching translation, there are no verified methods for selecting translation problems for a positive ‘test’. Nor do we know anything about the effectiveness of positive evaluation. One of the main objectives of this study was to devise a scheme for problem-selection. The other important aim was to reveal psychometric characteristics of such an evaluation method.

We started out with the 30 items defined on the basis of source text analysis and the pilot study, then we checked reliability and validity. This time, we also had to control inter-rater reliability.

To check interrater reliability first we calculated the total scores (30 items) of individual students for both raters and then computed Spearman correlation coefficients between the total scores. The **interrater reliability** estimate for the original total ‘test’ was **0,92** (Spearman rho, n = 361, p<0,01).

As expected, this value was higher than the interrater reliability indices of the holistic dimensions. Breaking up the text into smaller fragments enables more precise problem definition, and makes it easier for the raters to bring comparable decisions.

To test validity we examined how the test’s total scores correlated with the holistic dimensions. As interrater reliability was high, we decided to compute the mean values of the two evaluators’ total score, and use this new value for further analysis. Table 16 shows the correlations between the holistic dimensions and the results of the ‘test’.

Table 16 correlation between the holistic dimensions and the total score of the 30-item positive ‘test’.
(Spearman’s rho, n = 358) All correlations are significant at p<0.01

	Overall impression	Information	expression
Test total score	0,90	0,96	0,92

The high correlations indicate that the positive test measures the same phenomenon as the holistic dimensions.

However, as we wanted the problems’ test to function as a conventional test, reliability had to be checked, too. The mean values of the two raters’ scores were calculated for each item and for each student. This way we could check the reliability of the test. Cronbach α was 0,90 for 30 items and for the whole sample, which is fairly good.

As the test had to measure younger and older students as well, reliability had to be checked in the two age-groups separately, too. Cronbach α was still acceptable for grade 7 (0,85) but it was poor for grade 11 (0,70).

As a result, we decided to modify the test by dropping some items that showed low correlation with the total test score. This is a standard procedure in test construction to raise reliability. The modified test included 23 items (see Appendix 12) but Cronbach α was still not higher than 0,75. The reliability index of the modified test for grade 7 was 0,84, which was acceptable.

As can be seen, the composition of the test was not very favourable from the point of view of validity: 56,5% of the problems are of lexical nature, 34,8% of them are sentence-level problems, 4,3 % cultural and pragmatic (each). If we assume that translation is more than simply transposing signs from one language to another, then a test concentrating on the lexical level of translation is hardly acceptable as a valid measure of translation competence. However, as the original test’s correlations with the indices of holistic evaluation were fairly high, and thus, indicated no problems with validity, we decided to check the interrater reliability of the modified test and its correlation with holistic evaluation.

3.5.2.3 Indices of the modified problems’ test

Interrater reliabilities for the modified test are shown in Table 17. This time, values were calculated by age-groups, too. It can be seen, that the modification of the test did not corrupt

interrater reliability: it is excellent for the whole sample, and it is very good for the individual age-groups, as well.

Table 17 Interrater reliability of the modified test (p<0,001)

	Spearman rho
Grade 7 (n=219)	0,85
Grade 11 (n=147)	0,79
Whole sample (n=367)	0,93

Correlations with the holistic dimensions are presented in Table 18. As correlations are relatively high, we may assume that in spite of the overrepresentation of lexical items in it, the test measures an aspect of translation though this aspect is not identical with what the holistic dimensions assess. As a result, we decided to include the modified test scores in further statistical analysis.

Table 18 Correlations of the modified problems' test with the holistic dimensions (Spearman rho, p<0,001)

	Overall impression	Information transfer	Expression
Grade 7 (n=217)	0,72**	0,74**	0,71**
Grade 11 (n=147)	0,70**	0,73**	0,61**
Whole sample (n=367)	0,88**	0,89**	0,87**

3.5.2.4 Interrater reliabilities of the individual items

As we have already mentioned, it is often very difficult to decide whether a selected translation problem has been solved or not. We were also interested in which problems were easier to assess and which ones were more problematic for the raters. We assumed that the higher the interrater reliability of an item is, the easier it is for the raters to make a judgment concerning the correctness of the item. As a result, interrater reliabilities were computed for each item (see Appendix 13).

There were 14 items whose interrater reliability was above 0.60. In these cases it was not too difficult for the raters to come to an unambiguous decision independently. The ratio of the items by problem-categories is shown in Table 19.

Table 19 Items with high inter-rater reliability (above 0,60)

	Number of items with high inter-rater reliability	%	Number of items in the original test	Original %
Linguistic- lexical	9	64%	16	53,3%
Linguistic - sentence	3	21,4%	12	40%
Pragmatic	1	7,1%	1	3,3%
Cultural	1	7,1%	1	3,3%

The most striking finding here is that sentence-level problems are extremely difficult to judge unambiguously. Three-quarters of these problems were excluded because the raters' judgments diverged so strongly. In the process of selecting items to increase the reliability of the test we also had to drop more sentence-level than lexical-level problems. This reveals a problematic point in positive evaluation. The larger and the more complex the unit we would like to evaluate, the more unreliable evaluation becomes. In everyday terms, this means that chances grow that the same student's achievement will be judged differently by the different

raters and even the same rater may give a different evaluation to the same translation at a repeated evaluation session!

A positive outcome of the analysis is that it was relatively easy to assess cultural and pragmatic items in our study. This finding should be confirmed by other studies as this result could originate in the simplicity of the text and the problems involved. However, it makes sense to assume that cultural and pragmatic problems are easy to assess: for those who are familiar with the cultures and pragmatic conventions involved, such errors are clearly identifiable. Inexperienced translators usually make such mistakes because of *not recognizing* the problem itself.

3.5.2.5 The internal structure of the problem test

Items in the problem test were classified according to Nord's categories (see *Section 2.2.2.4*), which are purely theoretical and thus, hypothetical. Therefore, we decided to test whether there is empirical support for this type of classification of translation problems. Factor analysis was applied to uncover the underlying dimensions (sub-competencies) that are responsible for solving translation problems. Factor analysis is a statistical method that groups variables into factors based on interrelationships (correlations) between them. Factor analysis with varimax rotation was carried out on the modified problem test. Results of the factor analysis can be found in Table 20.

Factor analysis only partially confirmed the existence of Nord's categories. On the one hand, the only pragmatic problem (the order of items in the spouse section) clearly formed a distinct category although another item was included in the same factor, too. This item, however, can be seen as related to pragmatic problems as the acceptable solution requires the elimination of slashes in Hungarian. The factor was named thereafter '*attending to formal features*'.

On the contrary, we could not establish an autonomous factor for the only cultural problem in the test (changing feet and inches into centimetres). This, by no means can be seen as a proof against the existence of cultural problems and the ability to solve them. Several other types of problems with other samples should be tested to check the validity of the category.

The category of language-pair specific problems is so broad that the fragmentation of the group could be anticipated. Nevertheless, the several factors related to language pair specific problems offer valuable insights into natural translation competence although they do not necessarily correspond to previous expectations. Dividing problems into word-, sentence- and text-level problems *and* regarding them as increasing in difficulty suggests that the development of translation competence proceeds from word-level to text-level in a certain respect. Factor analysis, however, did not separate lexical and syntactic problems. The first factor includes several complex lexical problems (usually phrases), the solution of which calls for creativity. The sentence-level problems in the factor ('is a fixture...' and 'has been on the cover' similarly require some imagination. As a result, the factor was labelled "*creative language use*".

Similarly, the second factor contains both lexical and syntactic problems. They were, nevertheless, simpler, in the sense, that a conventional solution was more easily available for these problems. As a result, this factor was labelled "*conventional language use*".

The third factor was named '*temporal efficiency*', as strangely enough, the solutions of the last test items were grouped together here. In the background of temporal efficiency there must be a relatively solid and balanced language competence that enables the translator to complete his/her work. It is, however, open to discussion whether the same factor could be replicated in studies with professionals. The factor in our study might have originated in the fact that the two populations differed in language competence to a large extent, consequently, many of them (the younger students) could not even try to solve the last items of the test. On the other hand, those who had the time to translate the last sentences were probably so good at

both languages, that they could do this relatively well. This might have increased correlation among the last items of the test. Similar phenomena are not very likely to occur among professionals but they can arise any time when the translation task is too demanding for a proportion of the tested population.

Table 20 Summary of Confirmatory Factor Analysis Results for the modified problem test. Measure Using Maximum Likelihood Estimation with Varimax Rotation

Item	Factor Loadings					
	Creative language use	Conventional language use	temporal efficiency	Miscellaneous	Attending to formal features	Basic vocabulary
Big show business events (lexical)	0,74	0,03	0,08	0,08	-0,02	0,08
Celebrity parties (lexical)	0,69	0,12	-0,08	0,22	-0,01	0,09
Fashion shows (lexical)	0,64	0,52	0,24	0,08	0,13	0,07
Awards shows (lexical)	0,56	0,47	0,29	0,18	0,11	0,04
Is a fixture in ...	0,65	0,11	0,16	0,09	0,11	0,10
Has been on the cover...	0,59	0,27	0,48	0,18	0,11	0,08
International spokesmodel (lexical)	0,50	0,17	0,36	-0,04	0,24	0,08
Mini (lexical)	0,18	0,36	0,19	0,34	0,10	0,20
When she was nine	0,11	0,66	0,07	0,28	0,09	0,15
Screen debut (lexical)	0,11	0,67	0,09	0,09	-0,06	-0,06
Bluish-green eyes	0,16	0,46	0,17	0,11	0,02	0,27
Mother is Russian	0,34	0,56	0,08	-0,07	0,23	0,12
Once fronted	0,27	0,10	0,80	0,14	-0,03	-0,13
Once	0,06	0,18	0,81	0,03	0,13	0,04
Can speak fluent Russian	0,50	0,40	0,44	0,13	0,16	0,14
5'8" spouse	0,17	0,18	0,10	0,70		
Filed for divorce	-0,06	0,46	0,14	0,54	0,04	0,05
She's a model..	0,26	0,03	0,12	0,72	-0,07	0,16
Order of items	0,14	0,32	0,17	0,04	0,55	0,15
Birth name	0,08	-0,09	0,04	0,14	0,87	-0,05
Birth name	0,07	-0,02	0,15	0,19	-0,02	0,77
Date of birth	0,19	0,26	-0,02	-0,07	0,14	0,69
Eigenvalues	7,05	1,48	1,23	1,11	1,06	1,01
% of variance	32,04	6,74	5,57	5,06	4,82	4,57
Cumulative variance %	32,04	38,78	44,35	49,41	54,23	58,80
Kaiser-Meyer-Olkin measure	0,89					

Note: Factor loadings over .35 appear in bold.

The last factor was called '*basic vocabulary*' as this is what the two items in the factor reflect. Nevertheless, the existence of this factor is largely dependent on problem definition.

In summary, although Nord's translation problem-types may be linguistically justified and correct, they do not necessarily coincide with the psycholinguistic reality of translation problems. Factor analysis suggested that problems in our test could be divided into two main groups: those demanding creativity and those calling for conventional solutions. Furthermore, pragmatic problems were isolated as an autonomous factor, but the cultural problem could not

be separated from some other problems. Because of the low number of certain problem-types and the specific nature of the sample further investigations are needed to draw conclusions on the characteristics of translation problems.

3.5.2.6 Conclusions on positive evaluation

Our findings with positive evaluation are not unambiguous. *Interrater reliability* was exceptionally high, which is a clear advantage of the method. *Reliability* was more problematic, especially for grade 11. It should be noted, however, that reliability was good for the entire sample and for grade 7 as well. It is possible that the ST was not suitable as a base for positive evaluation in the case of grade 11. This is supported by the high achievement of grade-11-students on the holistic dimensions (see *Section 3.5.3*). An alternative solution would have been to select a different ST for grade 11. However, that would have impeded the comparison between the two age-groups' achievement. Nonetheless, failure to compile a "test" with high reliability for grade 11 does not mean that it is impossible to carry out such a task. But it certainly involves such an immense amount of preparation that the efficiency of the method becomes highly compromised, particularly in large-scale, summative surveys. If we are only interested in the overall translation performance of individuals, holistic evaluation seems to do a good job. Positive evaluation becomes unavoidable only in formative or diagnostic testing when there is a need to identify areas of strengths and weaknesses in students' translation competence.

The validity of positive evaluation is open to discussion, too. Its correlations with the holistic dimensions are high enough to attribute high validity to it. However, a closer examination of the items reveals that most problems are word-level problems, which is highly inconsistent with modern approaches to translation. But the most puzzling finding is that this 'test' overloaded with lexical problems is highly related to translation achievement as defined by the holistic dimensions. On the basis of our data, it seems probable that the solution of certain lexical problems does indeed signify a high(er) level of translation competence. It should be stressed here that *translation competence is not equalled with solving word-level problems*. Translation competence is a cognitive structure in the background that is well-tapped – among other things - by lexical items in our study.

Factor analysis did not fully support the existence of Nord's translation problem categories. Whereas pragmatic problems could be separated, the only cultural problem was merged into a miscellaneous factor. Language-pair specific problems were further divided into creative and conventional ones. However, as this is the first attempt to operationalize and statistically test positive evaluation, further investigation is needed to confirm whether Nord's categories should be re-defined or problem definition should be carried out with more caution.

A further problem in positive tests involves *subjectivity*. No matter how exactly we define translation problems, subjectivity cannot be excluded from evaluation. As a result, ideally, two raters should be involved in positive evaluation, too.

Moreover, in certain cases it is impossible to define the problem exactly (e.g. the evaluation of larger units like sentence-level problems). Judgments are usually more reliable in the case of lexical problems, and least reliable in the case of sentence-level problems. This, however, raises the question of validity, again.

To sum up, our data provide evidence that positive tests with good psychometric properties can be devised. Nonetheless, it depends upon the objectives of the actual evaluation situation and the professors or researchers involved whether it is worth investing in the development of such a test.

3.5.3 The development of translation competence between grade 7 and 11

3.5.3.1 Results of the translation test

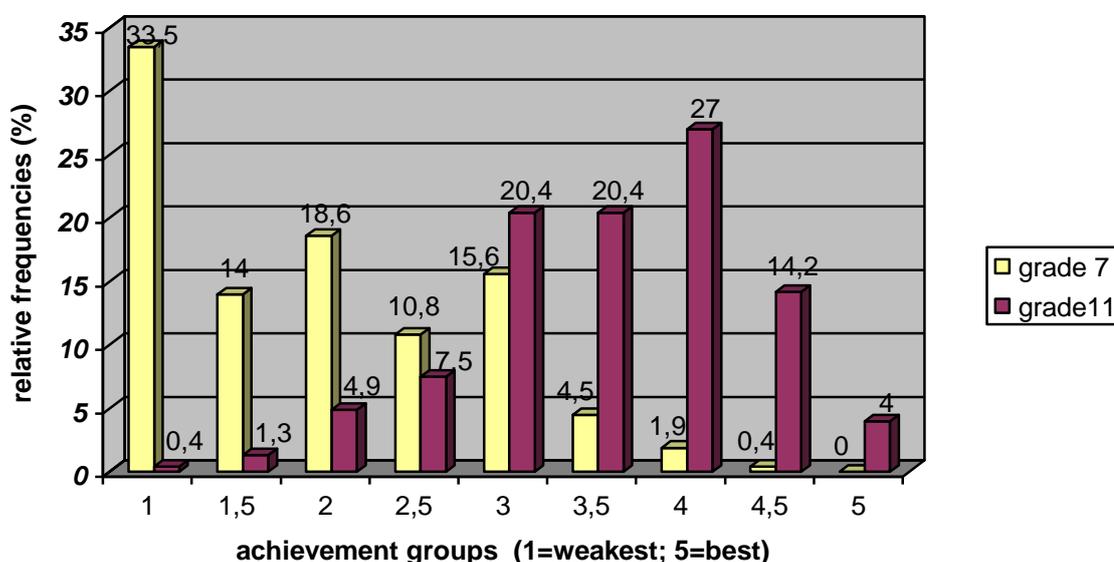
The results of the translation test are shown in Table 21. Grade 7 students' performance is poor, whereas grade 11 students' achievement is mediocre or slightly better on the *holistic* dimensions. The *problems' test scores* are extremely low in case of Grade 7 students, and they are also lower than expected for Grade 11 students. All differences between the two age groups are significant ($p < 0,001$).

Table 21 Mean and standard deviation of grade 7 and grade 11 students' performance. Results of the independent samples t-tests. All the differences between the two age groups are significant ($p < 0,001$)

	Grade 7		Grade 11		F(p)	t(p)
	Mean	SD	Mean	SD		
Overall impression	1,91	0,87	3,55	0,78	6,59 (0,01)	22,02 (<0,001)
Information transfer	1,99	0,91	3,76	0,86	2,15 (0,14)	22,13 (<0,001)
Expression	1,76	0,76	3,51	0,76	1,26 (0,26)	25,41 (<0,001)
(modified) problems' test	3,32	3,25	10,39	3,65	2,5 (0,12)	-18,96 (<0,001)

Performance differences can clearly be seen in Figure 4, too.

Figure 4 Grade 7 and Grade 11 students' performance indices on the dimension of "overall impression". Relative frequencies by achievement groups.



3.5.3.2 The effect of family background on translation performance

It is widely known that family background has a profound effect on the development of cognitive competencies/abilities and on school achievement (see e.g. Sirin, 2005; Csapó, 2002; Csala, 2002; Józsa, 2003; Józsa and Nikolov, 2005; Cs. Czachesz-Radó, 2003). In consequence, we may assume that translation competence is affected by family background, too. To test this hypothesis we computed Spearman correlation coefficients between parents'

educational qualifications and students' translation performance. The results are displayed in Table 22.

Table 22 Correlations between parents' educational qualifications and students' translation performance
* $p \leq 0,05$; ** $p < 0,01$

	Overall impression		Information transfer		Expression	
	Grade 7 n=194	Grade 11 n=184	Grade 7 n=194	Grade 11 n=184	Grade 7 n=194	Grade 11 n=184
Father's qualification	0,38**	0,14*	0,39**	0,17*	0,25**	0,08
Mother's qualification	0,38**	0,07	0,35**	0,10	0,30**	0,00

In grade 11, we found no significant correlations between parents' educational qualifications and students' translation performance. Correlations in grade 7 are weak to moderate. This result indicates that parents' educational qualifications do have an impact on translation attainment but the magnitude of this influence is small enough not to confound further analysis.

Nevertheless, we decided to modify the sample so that the distribution of parents' educational qualifications is the same in the two age groups. We could achieve this by excluding several students from the sample. The modified sample is presented in 23.

Table 23 The modified sample

	7 th graders	11 th graders	
<i>Boys</i>	63	62	N = 125
<i>Girls</i>	87	81	N = 168
N =	150	143	N = 293

We also checked students' translation performance in the modified sample. Results are shown in Table 24 and in Figure 5.

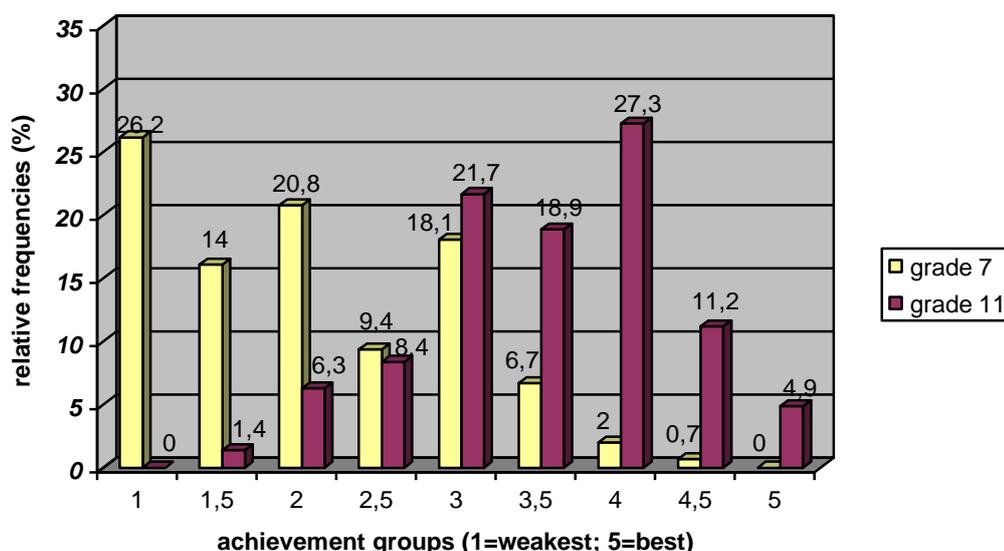
Table 24 Means and standard deviations of grade 7 and grade 11 students' performance in the modified sample (n=293). Results of the independent samples t-tests. All differences between the two age groups are significant ($p < 0,001$)

	Grade 7.		Grade 11.		F(p)	t(p)
	mean	SD	mean	SD		
Overall impression	2,04	0,88	3,51	0,79	3,36 (0,07)	14,85 (<0,001)
Information transfer	2,12	0,92	3,7	0,9	0,35 (0,55)	14,78 (<0,001)
Expression	1,86	0,79	3,41	0,77	0,54 (0,46)	17,05 (<0,001)
(modified) problems' test	3,77	3,59	10,1	3,63	0,37 (0,85)	12,07 (<0,001)

These findings suggest that altering the sample did not change the difference between the two age-groups' attainment considerably. The highly similar dispersions of performance indices on Figures 4 and 5 illustrate this observation very well. The magnitude of the difference between the achievement of grade 7 and grade 11 is similar in the original and the modified sample and it is significant in both cases.

In summary, neither the correlations between translation performance and parents' qualifications, nor the comparison between the attainment of the original and the modified sample brought evidence that family background as a function of settlement-type would profoundly influence translation performance. As a result, we decided to carry out further analysis relying on the original sample. The fact that the modified sample was considerably smaller contributed to our decision, as well.

Figure 5 Grade 7 and Grade 11 students' performance indices on the dimension of "overall impression". Relative frequencies by achievement groups. Modified sample (n = 293)



3.5.3.3 The discussion of the results

As we have seen in the previous section, there is a significant difference between the performance means of the two age groups. This suggests that there is a considerable development of natural translation competence between grade 7 and grade 11.

Several factors may contribute to this growth of competence. It is evident that the development of language competences (both English and Hungarian) plays a key role in the development of natural translation competence. This explanation is supported by the significant correlations between language skills and translation performance (see chapter 3.5.5). Nevertheless, other factors like cognitive development, the expansion of world-knowledge and possibly, some experience with translation (either in classroom setting or in real life) may enhance translation competence as well. Further research is needed to determine the role and weight of these factors in the development of translation competence.

It is also worth noting that the dimensions of translation competence become more independent as age and/or language competence increases. This is reflected by the decrease in correlation between the various dimensions (i.e. information transfer and expression) (see Table 14 in Section 3.5.2.1)

A careful observation of the results reveals that students in both age-groups did better on the dimension of information transfer than on expression. Higher achievement on information transfer suggests that it is not so much the understanding of the English source text that is problematic for the students, but its sound formulation in Hungarian. This finding is in line with previous research results (Alderson et al, 2000 cited by Alderson, 2001; Malakoff and Hakuta, 1991; Harris and Sherwood, 1978), which showed that it is usually not the meaning of the ST, but the TL structure or style that shows certain deficits in children's, students' or bilingual's translation.

Based on our and previous research results we may conclude that *the development of translation skills related to information transfer precede the development of skills related to the formulation of the TT*. It is important to stress here, that the skills of the formulation of the TT are obviously linked to writing skills in the TL, but they are by no means identical.

Problems with TL expression observed in this study may be caused by several factors. One of them is simple *ignorance*: the natural translator is probably convinced of the importance of transferring meaning as exactly as possible, but he/she may not be aware of the significance of the appropriate TT form. As a result, he/she may not pay enough attention to formulating the TT, which, in turn, may paradoxically endanger information transfer as well.

Furthermore, even if the translator already knows how important TL form is, keeping the two languages apart is too difficult a task (probably a pivotal component in translation competence) for natural translators to tackle.

3.5.4. Gender differences in translation performance

As Tables 25 and 26 show, we found gender differences in both age-groups and in all dimensions. The differences are in harmony with previous results on gender differences in language abilities (e.g. Bors et al., 2001; Csapó, 2001; Józsa and Nikolov, 2005; Nikolov and Józsa, 2006): girls achieved higher in both age groups and in all dimensions. The differences are significant, there is only one case (grade 11, information transfer) where the *p* value (0,055) is at the border of what we can consider to be significant.

Table 25 Gender differences in performance in grade 7. Results of the independent samples t-tests. All differences between the two age groups are significant (p<0,001)

	Boys (n= 94)		Girls (n=125)		F(p)	t(p)
	mean	SD	mean	SD		
Overall impression	1,67	0,80	2,10	0,87	1,70 (0,19)	4,20 (<0,001)
Information transfer	1,77	0,83	2,16	0,94	1,98 (0,16)	3,59 (<0,001)
Expression	1,53	0,63	1,95	0,80	6,86 (0,009)	4,60 (<0,001)
(modified) problems' test	2,70	2,59	3,79	3,61	9,04 (0,003)	2,49 (0,014)

Table 26 Gender differences in performance in grade 11. Results of the independent samples t-tests. All differences between the two age groups are significant (p<0,001)

	Boys (n= 91)		Girls (n=135)		F(p)	t(p)
	mean	SD	mean	SD		
Overall impression	3,32	0,80	3,70	0,74	0,83 (0,37)	3,57 (<0,001)
Information transfer	3,63	0,91	3,85	0,80	4,52 (0,04)	1,93 (0,055)
Expression	3,25	0,71	3,68	0,75	0,47 (0,49)	4,38 (<0,001)
(modified) problems' test	9,39 (n=61)	3,35	11,09 (n=86)	3,71	0,91 (0,76)	2,90 (0,004)

The magnitude of the differences is comparable in the two age groups, which means that gender differences in natural translation competence seem to be *stable* in adolescence. Both girls' and boys' competence develops but the difference does not change.

The only questionable dimension from this perspective is 'information transfer', where gender differences seem to diminish with age.

3.5.5 The relation of translation performance to particular language skills

As our study was linked to a foreign language survey, we had the opportunity to examine how translation performance relates to certain language skills. Within the framework of the Foreign Language Project data was collected on L1 (Hungarian) reading skills, on L2 (English) reading, listening and writing skills, and occasionally, on L3 (German) reading listening and writing skills. We must note here, however, that data collection on language skills preceded the completion of the translation by 10 months, which means that all our conclusions on the relations of translation and other language skills can only be tentative.

Correlations between translation performance indices and test scores for the languages involved in the translation task are displayed in Tables 27 (Grade 7) and 28 (Grade 11). The general tendency is that nearly all correlations are significant, suggesting that translation is in fact a competence with strong linguistic bonds. This finding obviously contradicts translation competence conceptions that deny its linguistic nature (see *Section 2.3* on translation competence).

The different skills, however, are not equally strongly related to translation performance. Moreover, the strength of the correlations changes as a function of age. As a result, a detailed analysis of the results is needed.

Table 27 Correlations (Spearman rho) between translation performance indices and some language skills. Grade 7. (n=169) ** p<0,01

	Standardized (L1) reading	L2 reading (English)	L2 listening	L2 writing
Overall impression	0,28**	0,72**	0,24**	0,62**
Information transfer	0,23**	0,74**	0,22**	0,65**
Expression	0,32**	0,70**	0,22**	0,64**
(modified) problems' test	0,28**	0,63**	0,16 (p =0,54)	0,50**

Table 28 correlations between translation performance indices and some language skills. Grade 11. ** p<0,01; * p<0,05

	Standardized (L1) reading	L2 reading (English)	L2 listening	L2 writing
Overall impression	0,23* (n=106)	0,47** (n=197)	0,23** (n=196)	0,43** (n=196)
Information transfer	0,23* (n=106)	0,49** (n=196)	0,31** (n=195)	0,44** (n=195)
Expression	0,15 (n=106)	0,39** (n=196)	0,31** (n=195)	0,48** (n=195)
(modified) problems' test	0,26* (n=76)	0,46** (n=125)	0,37** (n=127)	0,51** (n=127)

The comparison of the two age groups shows that *L1 reading* and *L2 listening* skills have a weak, but significant link with translation competence in both age groups and the strength of this relationship does not change with age and with growing language competence. It is unlikely that these skills have a direct influence on translation performance. It is much more reasonable to assume that L1 reading skills are related to L2 reading skills, and thus they implicitly influence the comprehension phase of translation. Similarly, L2 listening skills are related to L2 organizational competence (both grammatical and textual) in Bachman's sense (1990), which, again plays a role in understanding and interpreting L2 texts, and consequently, in the first phase of translation.

L2 reading skills show a definite link with translation performance in both age groups and this conforms to our expectations. However, the correlations are strong in grade 7, but they are only moderate in grade 11. Furthermore, in grade 7, L2 reading skills have clearly the strongest relationship to translation performance indices, but in grade 11, L2 writing skills are equally strongly related.

A possible explanation for the loosening connection between L2 reading and translation with age and language competence in our study lies in the difficulty of the ST. The ST was probably difficult to read and understand for grade-7 students, in consequence, more developed L2 reading skills contributed to better performance to a large extent. For students in grade 11 it was most likely not so much the understanding of the ST that caused translation

problems, but possibly its transfer into and formulation in Hungarian. As a result, the relative importance of reading in translation performance diminished.

This finding might have far-reaching consequences on how we think about the relationship of translation competence and the language (or other) skills and abilities related to it. On the basis of our data, we could easily draw the conclusion that the importance of L2 reading skills in natural translation competence decreases as language competence grows. However, we must not forget, that we could almost certainly give a text to grade 11 students that were difficult enough to create a situation where high levels of L2 reading skills were called for, again. In that case, the relative weight of L2 reading skills would grow once more.

This, however, means that it is impossible to determine the weight of L2 reading (and probably of other) skills in translation competence *in general* because it is constantly changing from translation situation to translation situation. It is highly dependent on the text and the individual translating it. Even in the case of expert translators, the fact whether they are dealing with a routine or a novel task may have a deep impact on the role reading plays in the final success of translation.

This, in turn, indicates that we should move from a simple static concept of translation competence to a more dynamic one: translation competence should be envisaged as a complex composite whose constituents are known but the exact proportion of these constituents cannot be determined. Obviously, the more a person possesses of each of these constituents, the better she/he should perform on translation tasks. However, these components are in a constant interplay, a phenomenon we know very little of, and that needs further investigations: factors like the cognitive style and experience of the translator, the type and difficulty of the ST or the translation brief may influence the interaction of the constituents of translation competence. In certain cases, language skills might be the most prominent factors predicting success, other times this factor may be specialized knowledge, yet another time, something else. All this, of course, concerns the relationship of competence and performance, just like the question of orchestrating the interplay of the components. This meta-component is obviously at the heart of translation competence, as this is the mechanism that controls the dynamics of translation competence. In other words, it selects the weight each component will play in a certain situation, modifies these weights and searches for and chooses compensation strategies. In a sense, this component might be what Pym (1992, 2003) calls the ability to produce variants and choose between them.

The changing importance of reading in translation performance calls for further research in the field: it would be vital to see whether this fluctuation characterizes experts and other language skills in other situations, as well.

A closer examination of the relations between *L2 writing skills* and translation performance shows that, again, correlation coefficients are lower in grade 11 than in grade 7. However, the decrease is smaller, and surprisingly, the relative importance of L2 writing skills seems to grow. In grade 11 it is the factor showing the strongest correlation with TL Expression and the problems' test score. This finding is slightly puzzling as L2 writing was thought to have only indirect links to translation competence, similarly to L1 reading or L2 listening. We can hypothesize that L2 writing is related to both L2 reading and L1 writing and this is how it establishes connection to translation competence. One of these hypotheses is supported by the results of the present Foreign Language Survey itself that demonstrated strong correlations between L2 reading and writing in both age groups (Table 29).

Table 29 Correlations between L2 language skills. Grade 7 and Grade 11. Pearson r.; p<0,01**

	L2 reading (English)		L2 listening		L2 writing	
	Grade 7	Grade 11	Grade 7	Grade 11	Grade7	Grade 11
L2 reading (English)	1.00	1.00	0,42** (n=179)	0,51** (n=183)	0,76** (n=179)	0,61** (n=183)
L2 listening			1.00	1.00	0,55** (n=186)	0,45** (n=197)
L2 writing					1.00	1.00

The association between L1 and L2 writing is not absolutely clear and there is dearth of research on the topic. The studies we found support the assumption that L1 and L2 writing are related, at least at lower proficiency levels (Carson et al, 1990; Wolfersberger, 2003) – and this is where the students in our sample belong to.

In addition, some studies indicated (e.g. Nikolov, 2003, Józsa and Nikolov, 2005; Nikolov and Józsa, 2006) that L2 writing is one of the most demanding tasks for language learners. As a result, we may assume that L2 writing attainment is related to one or more major background factors influencing language learning and processing. These factors may be related to translation, too, which would explain the relatively close connection.

The slight drop of the correlation between L2 writing and translation performance in grade 11 can be traced back to L2 writing's connection with L2 reading. As we have seen, L2 reading lost importance in grade 11, and this affected the factors connected to it, as well.

Though no data was collected on L1 writing skills, we may hypothesize that the weight of L1 writing skills remained intact, or perhaps increased slightly, which may have resulted in the growth of the significance of L2 writing skills as well.

The connections revealed here brought evidence that language skills are crucial components of translation competence. Nevertheless, the exact role of these skills in actual translation performance remains oblique. Further research focusing entirely on translation and language skills would be necessary to discover more exact details on their relationship. Particularly,

- data should be collected on L1 writing skills and their relations to translation;
- it should be examined how the relations between language skills and translation performance change as a function of age and experience of the translator, the type and difficulty of the ST or the translator's familiarity with the text- and translation-type at hand.

3.5.5.1 Translation performance and L3 language skills

In the Foreign Language Project some students were involved not only in the English, but in the German Language Survey as well. The number of these students in grade seven was so small that we could not carry out any further analyses. However, in grade 11 we could examine whether there were any significant correlations between German language skills and translation performance (from English into Hungarian). The results are presented in Table 30.

Table 30 Correlations between L2→L1 translation performance indices and L3 German language skills. Grade 11. ** p<0,01; * p<0,05

	L3 reading	L3 listening	L3 writing
Overall impression (n=94)	0,24*	0,07	0,24*
Information transfer (n=94)	0,25*	0,17	0,32**
Expression (n=94)	0,09	0,09	0,16
(modified) problems' test (n=48)	0,14	0,18	0,38**

It may seem odd to include a language into the correlational study that was not involved in the translation task itself. However, as we have already indicated in the previous section, there might be background factors of linguistic nature that are responsible for all kinds of language achievement, be it L1, L2, L3 or translation. As it is evidenced by the values in Table 30, reading and especially writing in German is weakly, but significantly correlated to translation from English into Hungarian. This finding only makes sense if we assume the existence of background variables. We must note here, that it is unclear what these background variables may be. L1 reading and writing skills and general intelligence may very well belong to this group.

It should be mentioned that L3 listening had no connections to L2→L1 translation performance, reinforcing our hypothesis described in the previous section that L2 listening skills are only as much related to translation achievement as they are influenced by L2 organizational competence, a factor behind all L2 language skills.

3.5.6 The relation of translation performance to inductive reasoning

In the Foreign Language Survey data was gathered on students' inductive reasoning to discover its connections with the development of foreign language skills. As a result, we had the opportunity to examine the relations between translation performance and inductive reasoning.

Inductive reasoning is a central component in many cognitive activities. In fact, some researchers regard it as a fundamental part of intelligence, to be more precise, of fluid intelligence (Gustaffson, 1988, Klauer et al., 2002).

Inductive reasoning is often defined in opposition to deductive reasoning. In case of deduction, reasoning is based on logical structure as opposed to (sentence) content. Premises provide absolute grounds for accepting the conclusions. On the other hand, induction is considered to be a function of content and of our knowledge of the world (Goel et al., 1997)

One of the best known definitions of inductive reasoning comes from Klauer (1989), who described it "as the systematic and analytic comparison of objects aimed at discovering regularity in apparent chaos and irregularity in apparent order" (De Koning et al, 2002). Regularities and irregularities can be detected by comparing the attributes of elements and/or the relationship of elements.

The importance of inductive reasoning lies in its assumed capacity to influence several areas of learning and cognitive functioning. Csapó (1998), for example, found significant correlations between inductive reasoning and achievement in most school subjects. Similarly, research brought evidence that inductive reasoning strongly affects success in foreign language learning (Carroll, 1981; Ottó and Nikolov, 2003). Furthermore, De Koning et al. (2002) claim, that text comprehension involves making inferences and integrating information from several sources, which are basically inductive processes. The two latter findings are important for us because both text comprehension and foreign language learning are related to translation. Consequently, it seemed justified to look for correlations between inductive reasoning and translation performance.

To assess students' inductive reasoning, a test battery devised at the Department of Education at the University of Szeged (Csapó, 1994, 1997) was administered. The original inductive reasoning test consisted of six subtests (number analogies, verbal analogies, letter series, number series, transcoding and exclusion) and they were used in the study on the development of inductive reasoning (Csapó, 1994, 1997). In later correlational studies, however, only the three subtests with the best psychometric properties were used (e.g. Csapó, 1998, 2001). The inductive reasoning test in our study was composed of the same three subtests: number analogies, verbal analogies and number series (see Appendix 2).

Table 31 Correlations (Spearman rho) between translation performance and inductive reasoning. Grade 7. * p<0,05; ** p<0,01

	Number analogies	Verbal analogies	Number series	Inductive reasoning
Overall impression (n=190)	0,17*	0,37**	0,22**	0,38**
Information transfer (n=190)	0,13	0,35**	0,23**	0,36**
Expression (n=190)	0,23**	0,40**	0,23**	0,44**
Modified test's score (n=149)	0,23**	0,42**	0,22**	0,42**

**Table 32 Significant correlations between thinking skills and language skills in grade 7. (n=161)
* p<0,05; ** p<0,01**

	Number analogies	Verbal analogies	Number series	Inductive reasoning
L2 reading	0,20*	0,35**	0,20**	0,38**
L2 writing	0,17*	0,27**	0,29**	0,36**

Relations between inductive reasoning and translation performance are shown in Tables 31 and 33. Table 32 and 34 display the correlations between language skills and inductive reasoning.

Our results are in line with Csapó's previous findings (1998): correlations are stronger in grade 7 than in grade 11. Furthermore, of the subtests, verbal analogies show the strongest correlations with translation performance indices. They are nearly as strong as correlations between translation and the combined inductive reasoning scores. Correlations range from weak to moderate.

The apparently loosening relation between inductive reasoning and translation with age might have several reasons. First, it is possible that specific competences, like translation, become more and more differentiated with age, and as a result, their relation to general cognitive abilities diminishes (see Csapó, 1998 for a similar explanation of his results). On the other hand, the possibility cannot be excluded that the nature of the translation task had an effect on the correlations. As the text was presumably easy for older students, inductive reasoning could not exert any visible influence on text comprehension, and thus, on translation either. It would be useful to examine the relationship between inductive reasoning and translation at this age group again with more difficult, and probably with other types of texts (e.g. argumentative), too.

Table 33 Correlations (Spearman rho) between translation performance and inductive reasoning. Grade 11. * p<0,05; ** p<0,01

	Number analogies	Verbal analogies	Number series	Inductive reasoning
Overall impression (n=190)	0,09	0,06	0,15*	0,17*
Information transfer (n=190)	0,07	0,03	0,21**	0,18**
Expression (n=190)	0,09	0,10	0,11	0,14
Modified test's score (n=149)	-0,03	0,17	0,12	0,09

Table 34 Significant correlations between thinking skills and language skills in grade 11. (n=174)

* p<0,05; ** p<0,01

	Number analogies	Verbal analogies	Number series	Inductive reasoning
L2 reading			0,17*	0,21**
L2 listening				0,16*
L2 writing	0,16*			0,18*

The special status of verbal analogies is not a surprise as translation itself is a verbal activity rather than numerical. However, analogical thinking seems to be a central component in inductive reasoning, which has the strongest relations to other areas of cognitive functioning, too (Csapó, 1998). It is possible, that verbal analogies have not more to do with translation than with other cognitive tasks and they only exert an indirect influence through the interpretation of texts. This explanation is supported by the fact that verbal analogies showed stronger correlations with science and math tests in Csapó's survey (1998) than with translation in our study.

If we compare translation's and other language skills' relation to inductive reasoning, we find that the correlations are of similar magnitude. We hypothesize that inductive reasoning exerts an indirect effect on translation via other language skills. However, the possibility of inductive reasoning's direct influence on translation cannot be ruled out either. Some researchers assume (e.g. Shreve et al, Danks and Griffin, 1997; Dudits, 2005) that reading for translation is different from "normal" reading and involves deeper processing. The aim of this supposed deeper processing is to find out the "deep structure" of the ST. This is closely related to inductive reasoning. Furthermore, translation can be directly related to verbal analogies as well, because translating can be seen as an act of finding analogies in a foreign language. This assumption, however, could only be validated by further research.

3.5.7 The relation of translation performance to academic achievement

An interesting and hardly researched issue in translation studies is the relationship of translation competence to world-knowledge and to specialized knowledge in other fields than translation. The fact that world-knowledge and specialized knowledge are difficult to operationalize and probably, even more complicated to test on adults, accounts for the dearth of research in the field. Examining the links between academic achievement expressed in grades and translation performance may give us a hint on this relationship.

However, it should be kept in mind that grades are rather peculiar indicators of achievement. In his research report Csapó (1998a) concludes that there are problems with their objectivity, reliability and validity. They not only reflect achievement as measured by tests, but are most likely influenced by a couple of non-cognitive factors we cannot identify because of lacking research. Social skills, personality traits, mastery motivation, parents' socio-economic status may belong to these factors.

These features of school grades must be taken into account when interpreting our results.

Correlations between school grades and translation performance are shown in Tables 36 and 37. Data on most school grades was gathered in 2002, at the time of the data collection on language skills. Grades in Hungarian language and literature and in English language were also checked in 2003, that is, at the time the translation test was taken. Table 35 shows that there are moderate to strong correlations between grades obtained in the second semester of the Academic Year of 2001/2002 and those at the end of the next semester. On the basis of these results it is justified to examine the relationship between school grades and translation performance although we must take into account that nearly a year passed between the two data collection sessions. A further justification is provided by the fact that the correlation between the dimensions of translation performance and grades in Hungarian language and

literature and English do not differ at the two data collection occasions (see Tables 36 and 37). We assume that correlations between translation performance and other school grades remained similarly stable.

Table 35 Correlations (Spearman rho) between grades obtained at the end of the Academic Year 2001/2002 and at the end of the first Semester of 2002/2003.

	Hungarian language at the end of 2001/2002		Hungarian literature at the end of 2001/2002		Foreign language at the end of 2001/2002	
	7 th grade	11 th grade	7 th grade	11 th grade	7 th grade	11 th grade
Hungarian language (first semester 2002/2003)	0,76**	0,57**				
Hungarian literature (first semester 2002/2003)			0,70**	0,58**		
Foreign language (first semester 2002/2003)					0,75**	0,61**

Table 36 Correlations (Spearman rho) between translation performance and academic achievement. Grade 7. All correlations are significant at the $p < 0,001$ level

	Overall impression (n=190)	Information transfer (n=190)	Expression (n=190)	Modified test's score (n=150)
Grade average	0,59	0,60	0,58	0,50
Maths	0,46	0,47	0,49	0,45
Physics	0,49	0,48	0,49	0,42
Biology	0,54	0,54	0,55	0,47
Geography	0,36	0,39	0,34	0,29
Hungarian Language 1.	0,49	0,49	0,52	0,43
Hungarian Language 2.	0,48	0,46	0,51	0,42
Hungarian Literature 1.	0,51	0,50	0,49	0,39
Hungarian Literature 2.	0,47	0,45	0,48	0,38
History	0,42	0,41	0,40	0,33
Drawing	0,53	0,53	0,51	0,37
Foreign language 1.	0,51	0,51	0,50	0,50
Foreign language 2.	0,60	0,58	0,60	0,47

1. At the end of the 2nd semester of the Academic Year 2001/2002.
2. At the end of the 1st semester of the Academic Year 2002/2003

In grade 7 each and every subject showed significant moderate correlations with the dimensions of translation performance. The strength of the correlations corresponds to what Csapó (1998a) found when he studied the relations between school grades and achievement tests in other areas of school learning.

It is worth noting that no subject or dimension seems to be dominant in a sense that it would exhibit stronger relations with other factors: values in the table are distributed fairly evenly. A closer inspection reveals that English and Grade average show the strongest correlations with translation performance, but the differences are rather small. Somewhat puzzling is the high correlation between translation and biology, which can be observed in both cohorts.

The link between grades in English and translation performance is not an unexpected outcome, although it is a minor surprise that English is not much more closely related to translation performance than the other subjects. This may refer to problems with teachers' grading policy and practice already proposed by Csapó (1998a).

It is similarly surprising that Hungarian language and literature are not more closely related to translation performance indices than other subjects. Apart from grading problems, the difficulty of the translation task may account for this phenomenon: As we have seen, it was not so much expression but information transfer that differentiated between 7th graders. We

may argue that students did not reach the point in the translation process where their first language skills would have played a significant role. As a result, Hungarian language and literature can only be associated with translation performance as much as they are associated with general cognitive abilities influencing translation competence.

As a summary, we may conclude that success on the translation task is related to school grades at this age group. This may reflect the importance of general (world-)knowledge, but it is also possible that other underlying factors (some general cognitive abilities, verbal ability or conscientiousness) are responsible for the observed link. Furthermore, it cannot be excluded that the similar correlations across the different subjects are an artefact of Hungarian grading practice and statistics, and as such, they do not reflect real connections. Csapó (1998a) found evidence that school grades are usually highly correlated with each other. As a result, it may be enough for translation performance to be connected to only one of the subjects in reality, because of the marked correlation among the school subjects, it will appear as if translation were related to every subject.

Table 37 Correlations (Spearman rho) between translation performance and academic achievement. Grade 11. * $p < 0,05$; ** $p < 0,01$

	Overall impression	Information transfer	Expression	Modified test's score
Grade average	0,27**	0,14	0,35**	0,32**
Maths	0,19**	0,11	0,27**	0,22**
Physics	0,14	0,08	0,20**	0,22**
Chemistry	0,17*	0,12	0,25**	0,27**
Biology	0,34**	0,22**	0,30**	0,27*
Geography	0,25**	0,13	0,30**	0,26**
Hungarian Language 1.	0,28**	0,20**	0,32**	0,37**
Hungarian Language 2.	0,25**	0,20**	0,30**	0,35**
Hungarian Literature 1.	0,31**	0,23**	0,38**	0,37**
Hungarian Literature 2.	0,31**	0,25**	0,40**	0,36**
History	0,25**	0,18*	0,20**	0,29**
Drawing	0,13	0,06	0,24**	0,22*
Foreign language 1.	0,30**	0,24**	0,25**	0,32**
Foreign language 2.	0,33**	0,30**	0,26**	0,30**

1. At the end of the 2nd semester of the Academic Year 2001/2002.

2. At the end of the 1st semester of the Academic Year 2002/2003

Correlations in grade 11 are lower than in grade 7: they are weak to moderate. As we have seen, the translation task was relatively easy for 11th graders, and this may obscure the relationships between school grades and translation performance.

Closer observation reveals that there is a definite decrease in the number of significant correlations between school grades and information transfer. Only pivotal subjects (Hungarian and English) and biology correlate significantly with information transfer. A possible explanation, again, is the simplicity of the ST. The text was so easy that neither school subject specific knowledge, nor well-developed cognitive abilities were necessary to understand it: differences disappeared.

Nevertheless, it is notable that the subjects that are thought to be most closely related to translation were singled out.

The translation performance dimension that shows the strongest correlations with school subjects is Expression. A probable explanation is that the ability to express oneself in his/her mother tongue may be both at the heart of translation competence and a factor promoting scholastic achievement. This finding is replicated at another “level”, too: Hungarian literature shows one of the strongest relations to performance indices.

To sum up, Hungarian language and literature, foreign language, and surprisingly, biology correlate most strongly with translation performance dimensions. Whereas the bond between achievement in languages and translation is clear, it is hard to explain biology's relation to translation achievement. It is possible that some background variables (e.g. verbal ability) are responsible for the association.

In general, correlations between school grades and translation performance may hint at the importance of world knowledge but they may equally be produced by some general cognitive ability influencing both academic achievement and translation attainment.

3.5.8 The relation of translation performance to attitudes toward schooling

The Foreign Language Survey was accompanied by a questionnaire that measured students' attitude to schooling in general and to individual subjects in particular. In addition, students were asked whether they were satisfied with their academic achievement and what their long-term educational aspirations were. The questionnaire was devised by Csapó (2000; see Appendix 3).

Attitude is usually defined as a general disposition, a tendency or a readiness to respond to a certain object or situation with an evaluative reaction. (For definitions on attitudes see for example Allport, 1935, Fishbein and Ajzen, 1975; Eagly and Chaiken, 1993).

The examination of attitudes has become increasingly popular in educational research as it has been realized that cognitive factors alone cannot account for academic success (or failure) in many cases (Csapó, 2000). Attitudes are presumed to have a close connection to achievement: on the one hand, positive attitudes may induce better performance and vice versa, good performance is thought to contribute to the formation of (more) positive attitudes. Moreover, positive attitudes can be regarded as favourable educational outcomes themselves as they may anticipate further motivation and interest in learning and training.

Research on school attitudes usually focuses on two areas: on the study of attitudes themselves and on the analysis of the relationship between attitudes and other factors like teachers' ratings of student achievement, performance test scores or parental background (Csapó, 2000). In our study we are going to concentrate on how attitudes to schooling in general and to language learning in particular relate to translation performance. Therefore, we would like to present some previous research results in a few words.

The most striking finding of these studies is that no close relationship between academic achievement and attitudes could be demonstrated. Conolly et al. (1998) found that school attitudes correlated significantly but only weakly with math achievement in early adolescence. Furthermore they discovered that girls' attitudes were more positive than boys' and that teachers' ratings of students' achievements were slightly more correlated to students' attitudes than the results of the math tests themselves. These findings suggest a close link between teachers' attitudes to students and students' attitudes to school, but this is outside the scope of our study.

Abu-Hilal (2000) suggested that there are only indirect connections between attitudes and achievement: the level of aspiration interacts with attitudes and modifies their effect.

Hungarian findings are in line with international research results. Correlations between academic achievement and attitudes are usually significant but rather low, or at best, moderate (Csapó, 1998a, 2000; Kocsis, 2000; Csala, 2002)

As our research question concerned the relationship of translation performance with background factors, correlations between performance indices and attitudes were computed. Correlations are shown in Tables 38 and 39. Only significant correlations were listed in the tables.

Table 38 Significant correlations (Spearman rho) between translation performance and attitudes toward schooling. Grade 7. Correlations are significant at the $p < 0,001$ level

	Overall impression (n=207)	Information transfer (n=207)	Expression (n=207)	Modified test's score (n=163)
Likes going to school	0,31	0,35	0,29	0,32
Satisfied with achievement	0,31	0,33	0,26	0,31
Educational aspirations	0,56	0,55	0,52	0,50
Attitudes to physics	0,19	0,21	0,2	
Attitudes to history	0,33	0,33	0,26	0,23
Attitudes to foreign language	0,37	0,35	0,31	0,27
Attitudes to geography	0,22	0,22	0,16*	
Attitudes to Hungarian Language	0,18	0,18	0,19	0,20

* $p < 0,02$

Our first question is whether school attitudes show a relation to translation performance. In general, our findings give support to previous research results, as *attitudes show only weak to moderate correlation with performance*. In addition, the *link* between the two phenomena *decreases with age*. This is no wonder, as attitudes are shown to decline with age (Csapó, 2000), but at the same time, there is development in translation competence, which is reflected in performance, too. This finding can be interpreted as older students' tendency to govern their performance less emotionally.

The second issue involves the connection between the attitudes to school subjects and performance. Some subjects, like foreign language, and Hungarian grammar and literature have direct relevance to translation. In grade 7 we could observe significant though weak correlations between the attitudes to these subjects and translation performance. It was foreign language attitudes that showed the strongest relation to performance, which conforms to our expectations, but it should be noted that the link between the two factors is not especially strong.

There were significant correlations between translation performance and attitude to some other subjects. These are more difficult to explain: they are probably the result of the interrelation of attitudes. Csapó (2000) has shown that attitudes are closely related to each other in 7th graders; as a result, if one attitude is related to performance then the others will show a certain degree of correlation, too.

General markers of attitudes like going to school and satisfaction with achievement show correlations of similar strength to performance as attitudes to subjects. However, *educational aspirations* stand out as the factor most closely related to performance. This is a replication of Abu-Hilal's (2000) and Csapó's (2000) findings and suggests that educational aspirations are the most powerful factors predicting performance. Results can be interpreted the other way round too: Good performance has a stronger effect on educational aspirations than on the fact whether students like the subject or not.

As already mentioned, correlations between attitudes and performance decrease with age. Surprisingly, not even foreign language attitudes show a convincing connection to translation performance. We must note here, however, that no data was gathered on attitudes to translation and foreign language attitudes clearly cannot be equalled to it.

An interesting finding is the negative correlation between the attitudes to physics and translation performance. Before jumping to premature conclusions, we must recall Hungarian research results that demonstrate the low "emotional" status of physics as a school subject: it has been the "most hated" subject in Hungarian schools (Csapó, 1998a, 2000, Kocsis, 2000).

In consequence, if physics is so widely disliked, it is likely to have negative relations to most performance indices.

Table 39 Significant correlations (Spearman rho) between translation performance and attitudes toward schooling. Grade 11. * p<0,05 ** p<0,01

	Overall impression (n=185)	Information transfer (n=184)	Expression (n=184)	Modified test's score (n=114)
Satisfied with achievement	0,18*	0,15*	0,19*	0,26*
Educational aspirations			0,19**	0,20*
Attitudes to physics	-0,22**	-0,18**	-0,25**	-0,27**
Attitudes to chemistry				0,25**
Attitudes to geography				-0,21*
Attitudes to foreign language		0,16*		0,22*

3.5.9 Attitudes to language learning and translation achievement

Data was collected not only on attitudes to schooling in general, but on attitudes to language learning, as well. As learning a foreign language is usually considered to be an extremely long and complex process (Dörnyei and Otto, 1998), motivation and the related problem of attitudes to language learning may play a crucial role in success.

In the Foreign Language Survey a 14-item questionnaire (see Appendix 4) developed by Csapó (2001) was administered to the students. As these questions were directly related to foreign languages we expected higher associations between them and performance indices than in the case of attitudes to schooling in general.

Correlations between attitudes to language learning and translation performance are shown in Table 40. Certain tendencies like the special importance of 'language easy for me' or stronger correlations in grade 7. are clearly visible in the table, but the large number of variables hinders efficient analysis, as a result, we decided to carry out exploratory factor analysis and simplify the structure of variables. Factor analysis grouped the 14 questions into four sets (Table 41).

Table 40 Correlations (Spearman rho) between attitudes to language learning and translation performance ** p<0,01; * p<0,05

	Overall impression		Information transfer		Expression		Modified test score	
	Grade 7 (n=214)	Grade 11 (n=190)	Grade 7 (n=214)	Grade 11 (n=190)	Grade 7 (n=214)	Grade 11 (n=190)	Grade 7 (n=169)	Grade 11 (n = 123)
Likes language	0,31**	0,09	0,29**	0,13	0,26**	0,07	0,31**	0,17
Language not useful	-0,19**	-0,18**	-0,21**	-0,22**	-0,20**	-0,16*	-0,31**	-0,10
Parents think important	0,18**	0,10	0,24**	0,07	0,18**	0,11	0,26**	0,00
Interested in people	0,01	0,11	0,04	0,14	0,06	0,08	0,13	0,14
Interested in culture	-0,03	0,10	-0,01	0,13	-0,01	0,10	-0,11	0,16
Classes boring	-0,20**	-0,03	-0,18**	-0,11	-0,17	0,05	-0,23**	-0,18*
Not good at learning languages	-0,21**	-0,04	-0,22**	-0,15*	-0,18**	-0,04	-0,23**	0,06
Language easy for me	0,42**	0,19**	0,41**	0,26**	0,40**	0,08	0,39**	0,18*
More hard work	-0,34**	-0,18*	-0,33**	-0,19**	-0,30**	-0,08	-0,26**	-0,08
Can't do better	-0,32**	-0,13	-0,30**	-0,15*	-0,35**	-0,11	-0,25**	-0,16
Spare time	0,17**	0,06	0,18**	0,10	0,19**	0,09	0,17*	-0,14
Failure	-0,32**	-0,18*	-0,32**	-0,21**	-0,30**	-0,20**	-0,30**	-0,31**
Anxious	-0,17**	0,07	-0,19**	-0,14	-0,19**	-0,03	-0,24**	-0,14
Poor textbooks	0,11	0,04	0,14*	-0,12	0,11	0,11	0,13	-0,05

Elements in the first factor were all related to *language learning specific self-concept*, hence the naming of the group. As most of the questions related to self-concept appeared in negative form in the questionnaire, we inverted values (with the exception of ‘this language is easy for me’) to avoid negative correlations with translation performance indices.

In the second factor we included items that were related to the *enjoyment and usefulness of English*.

The third factor was labelled *integrational tendencies* as two of the variables included in it involved what is usually called integrational motivation that is, an interest in the people and the culture related to the foreign language. Statistical analysis confirmed that students who show interest in the other culture are ready to devote some of their spare time to learning the language, too.

The items ‘boring classes’ and ‘poor textbooks’ were grouped together in the last factor. As in the first factor, we inverted the values of the variables to make the interpretation of statistical data easier.

Table 41 Summary of Exploratory Factor Analysis Results for attitudes to language learning. Measure Using Maximum Likelihood Estimation with Varimax Rotation

Item	Factor loadings			
	Self-concept related to language learning	Enjoyment and usefulness	Integrational tendencies	School experience
Not good at learning languages	0,53	-0,54	0,10	-0,04
Language easy for me	-0,55	0,46	0,25	0,02
More hard work	0,59	0,04	-0,21	0,07
Can't do better	0,65	-0,12	-0,11	0,03
Failure	0,77	-0,05	-0,04	0,16
Anxious	0,65	-0,15	0,07	-0,06
Likes language	-0,23	0,53	0,46	-0,21
Language not useful	0,16	-0,66	-0,04	0,06
Parents think important	0,09	0,68	0,09	0,03
Interested in people	-0,09	0,42	0,63	-0,13
Interested in culture	-0,04	-0,19	0,78	0,14
Spare time	-0,23	0,37	0,63	-0,17
Classes boring	0,19	-0,20	-0,12	0,69
Poor textbooks	-0,07	0,11	0,05	0,84
Eigenvalues	3,93	1,52	1,23	1,08
% of variance	28,10	10,87	8,78	7,71
Cumulative variance of %	28,10	38,97	47,74	55,45
Kaiser-Meyer-Olkins measure			0,83	

Note: Factor loadings over .40 appear in bold.

The correlations of translation performance and the derived attitude factors are easier to interpret. As can be seen in Table 42, only two factors, *language learning related self-concept* and *enjoyment and usefulness* show a systematic connection to translation performance. Self-concept is significantly correlated with performance in both age-groups, although the magnitude of the association is smaller in the older age-group. Enjoyment and usefulness are an important factor in year 7 but there are no significant correlations in year 11 except for information transfer. This correlation is, however, nearly negligible.

Table 42 Correlations between attitude factors and translation performance. Spearman rho.
**** p<0,01; * p<0,05**

	Overall impression		Information transfer		Expression		Modified test score	
	Grade 7 (n=212)	Grade 11 (n=188)	Grade 7 (n=212)	Grade 11 (n=187)	Grade 7 (n=212)	Grade 11 (n=187)	Grade 7 (n=164)	Grade 11 (n = 121)
Self-concept	0,44**	0,21**	0,44**	0,26**	0,43**	0,15*	0,40**	0,21*
Enjoyment and usefulness	0,30**	0,14	0,31**	0,17*	0,30**	0,12	0,37**	0,15
Integrational tendencies	0,08	0,12	0,10	0,17*	0,11	0,11	0,10	0,22*
School experience	0,12	0,03	0,09	0,12	0,10	-0,11	0,15	0,12

Not one of the translation performance dimensions makes itself noticeable by showing stronger relations to attitudes than the others. In other words, attitudes seem to be equally connected to all performance dimensions.

The strength of the correlations is weak to moderate, although self-concept's relation to translation performance in grade 7 is the strongest attitude association in our study. The other correlational values are comparable to those found between attitudes to schooling and translation performance.

In summary, translation performance is related to attitudes to language learning in natural translators, though the magnitude of the correlation is not especially strong, and shows decreasing tendency with age. Self-concept is the factor displaying the strongest association with achievement and integrational tendencies and school experiences seem to be independent of translation achievement in our sample.

Table 43 Significant Correlations (Spearman rho) between translation performance and attitudes toward schooling. Grade 7. Gender differences. * p<0,05 ** p<0,01

	Overall impression		Information transfer		Expression		Modified test's score	
	Boys (n=86)	Girls (n=119)	Boys (n=86)	Girls (n=119)	Boys (n=86)	Girls (n=119)	Boys (n=68)	Girls (n=93)
Likes going to school	0,34**	0,21*	0,40**	0,25**	0,34**	0,19*	0,40**	0,22*
Satisfied with achievement	0,36**	0,18*	0,42**	0,21*	0,34**		0,47**	
Educational aspirations	0,65**	0,48**	0,61**	0,50**	0,63**	0,44**	0,49**	0,47**
Attitudes to physics	0,26*		0,28**		0,31**		0,32**	
Attitudes to history	0,44**	0,28**	0,38**	0,28**	0,34**	0,20*	0,39**	0,22*
Attitudes to foreign language	0,58**		0,56**		0,52**		0,54**	
Attitudes to geography	0,34**		0,33**		0,26*			
Attitudes to Hungarian Literature	0,34**		0,27*		0,22*			
Attitudes to Hungarian Language	0,26*		0,27*		0,26*		0,38**	

3.5.9.1 Gender differences in the relations of attitudes and performance

As previous studies indicated consistent gender differences in school attitudes and as we have observed translation performance differences in our study, we hypothesized that the relation of the two factors might differ from one sex to the other as well. To verify this assumption we

checked correlations by gender in each age group too and we arrived at some unexpected results.

As for attitudes to schooling and to school subjects, no substantial differences could be detected between correlations in grade 11. Most correlations were not significant and even the significant ones were low for both sexes. On the basis of our data gender differences in the older age group cannot be validated.

However, in grade 7 correlations between attitudes and translation performance were always stronger in the case of boys than in the case of girls (see Table 43). This tendency can be observed in language learning attitudes, too (see Table 44), although enjoyment and modified test scores are more strongly correlated in the case of girls than in the case of boys. Unfortunately, we have no sufficient data to interpret why exactly this combination forms an exception in the sample.

Table 44 Correlations (Spearman rho) between translation performance and attitudes to language learning. Grade 7 * p<0,05; ** p<0,01

	Overall impression		Information transfer		Expression		Modified test score	
	Boys (n=123)	Girls (n=75)	Boys (n=123)	girls (n=75)	Boys (n=123)	Girls (n=75)	Boys (n=97)	Girl (n = 49)
Self-concept	0,46**	0,39**	0,46**	0,39**	0,47**	0,37**	0,41**	0,36**
Enjoyment and usefulness	0,33**	0,25**	0,35**	0,25**	0,30**	0,25**	0,28*	0,37**
Integrational tendencies	0,06	-0,01	0,15	-0,01*	0,11	0,00	0,14	0,00
School experience	0,08	0,13	0,06	0,10	0,00	0,15	0,06	0,19

We have argued above that there were no gender differences in the association between school attitudes and translation performance in grade 11. The question arises whether this is true for language learning attitudes too. Our results suggest that correlations do seem to be somewhat stronger for boys than for girls (see Table 45), but it is more accurate to say that correlations show different patterns for boys than for girls.

In the case of boys, language learning related self-concept is positively associated with three of the four performance factors, underlining the importance of this attitude factor. An interesting result is that school experience is slightly, but significantly related to information transfer and modified test scores in this sub-sample.

Table 45 Correlations (Spearman rho) between translation performance and attitudes to language learning. Grade 11. * p<0,05; ** p<0,01

	Overall impression		Information transfer		Expression		Modified test score	
	Boys (n=76)	Girls (n=111)	Boys (n=75)	girls (n=111)	Boys (n=75)	Girls (n=111)	Boys (n=51)	Girl (n = 72)
Self-concept	0,31**	0,13	0,23*	0,30*	0,23*	0,08	0,27	0,14
Enjoyment and usefulness	0,18	0,14	0,15	0,20*	0,15	0,11	0,15	0,15
Integrational tendencies	0,13	0,11	0,18	0,17	0,10	0,10	0,29*	0,13
School experience	0,11	-0,05	0,26*	-0,00	-0,04	-0,19*	0,30*	0,02

In case of girls, *information transfer* seems to be more related to the two dominant attitude factors, self-concept and enjoyment and usefulness than other performance factors. It is worth noting that unlike in the case of boys, language learning related self-concept shows no further correlations with achievement for girls. This raises further questions regarding gender

differences in self-concept, but as they obviously fall outside the scope of our study, we do not wish to engage in a deeper analysis of the issue.

To conclude, our findings imply that the links between attitude and translation performance are stronger for boys than for girls, especially in early adolescence. The consequences of these results are related to issues of motivation: the assumption that high achievement raises attitudes and interest may work better for boys than for girls. Similarly, if we turn the relationship upside down, we may hypothesize that more positive attitudes and higher aspirations lead to higher achievement. Again, this may be more accurate for boys than for girls. However, to verify that this is a general tendency gender differences in correlations between attitudes and performance in other subjects should be studied, too.

3.5.10 Translation performance and perceived task difficulty

The questionnaire accompanying the translation task included a question on perceived task difficulty: students rated the difficulty of the translation task on a five-point scale.

Perceived task difficulty can effect achievement in several ways. First, it is a factor of achievement motivation (Wigfield and Eccles, 1992; Eccles and Wigfield, 2002), which means that the perceived difficulty of the task defines how much energy the subject is willing to invest in the solution of the task. We must note, however, that further factors like task value factors and expectancy/ability factors interact with perceived task difficulty, and thus, perceived task difficulty alone cannot predict motivation or achievement. From this motivational point of view, if the task is perceived to be too difficult, the incentive to solve it will drop, which may result in lower achievement.

On the other hand, perceived task difficulty is also associated with metacognitive aspects of problem solving. In this sense, being aware of the difficulties of the task may induce more conscious and appropriate problem-solving strategies and encourage the use of self-regulatory processes (Stephanou, 2004; De Corte, 2004; Schunk and Zimmerman, 1998).

Table 46 shows that 7th graders perceived the translation task to be moderately difficult, while students in the 11th grade thought that it was easy.

Table 46 The perceived difficulty of the translation task (1 very easy – 5 very difficult)

	Mean	SD	F(p)	t(p)
Grade 7. (n=263)	3,17	0,81	0,21 (0,65)	11,86 (<0,001)
Grade 11. (n=217)	2,3	0,78		

The essential question is, however, whether there is a connection between perceived task difficulty and achievement on the translation task. Table 47 proves that there is a weak but significant correlation between perceived difficulty and achievement in grade 7 (the correlational values are negative as the best attainment was rated 5, and the “very easy” answer was assigned 1). This association becomes negligible by grade 11.

Table 47 Correlations between perceived task difficulty and translation performance by age group. (Spearman rho) * p<0,05 ** p<0,01

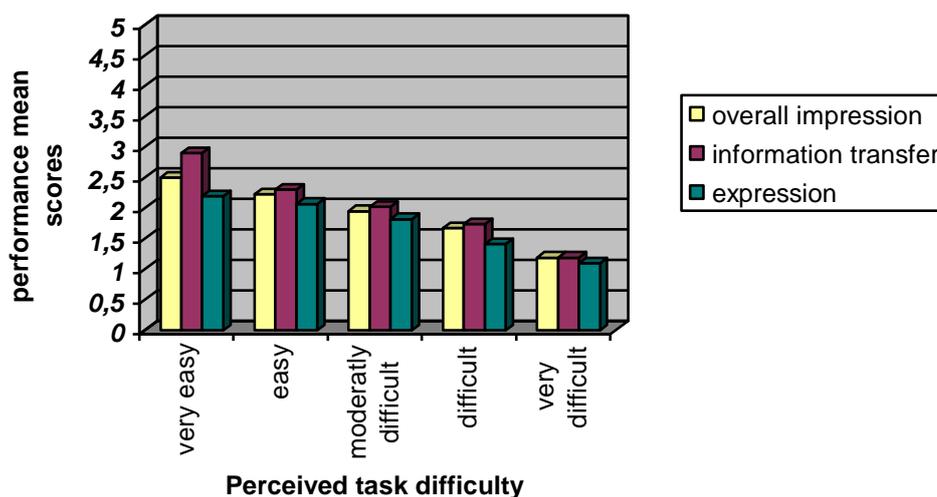
	Grade 7. (n = 259)	Grade 11. (n= 215)
Overall impression	-0,29**	-0,15*
Information transfer	-0,31**	-0,19**
Expression	-0,33**	0,06
Modified test score	-0,20**	-0,09

Next, we grouped students on the basis of how difficult they found the task. Figures 6 and 8 illustrate the relation between perceived task difficulty and translation performance by these groups. The 7th graders’ graphs demonstrate clearly that those who perceived the task to be

easier performed better on the translation task. Nevertheless, performance usually lagged behind the perceived ‘easiness’ of the task. This can be best observed on the 7th graders’ diagram, which shows that even the children who assessed the task to be very easy could only be characterized by weak to mediocre performance on the translation task.

Modified test scores are presented in a separate figure (Figure 7) as they were not assessed on a five-point scale and as a result, they would have distorted the picture. Nonetheless, modified test scores show the same tendency in grade 7.

Figure 6 The relation between perceived task difficulty and translation performance in Grade 7.



The question arises, what causes this discrepancy between performance and perceived difficulty. We may look for an explanation within the domain of translation: it is possible that students make a cognitive error while interpreting the task: They may conceptualise the translation task as a (reading) comprehension task. As the text looks rather easy at the first sight, and as students must have understood a substantial portion of it at the first reading, they may have labelled it easy. The text is probably slightly misleading from this aspect: it may be much easier for the language learner to read and understand than to give a decent translation of.

Once again, it is possible that students’ *immature and naive translation theories* cause the problem: they may not be aware of the fact that *comprehension and translation are two distinct activities*. Undeveloped translation conceptions were already discussed in relation to lower performance on the expression dimension.

However, as no data on students’ naïve translation theories were gathered we cannot draw any conclusions on this issue. It cannot be ruled out either, that certain factors like perceived and/or real ability to cope with the task further modified the influence of perceived task difficulty.

Figure 7 The relation between perceived task difficulty and modified test scores in Grade 7.

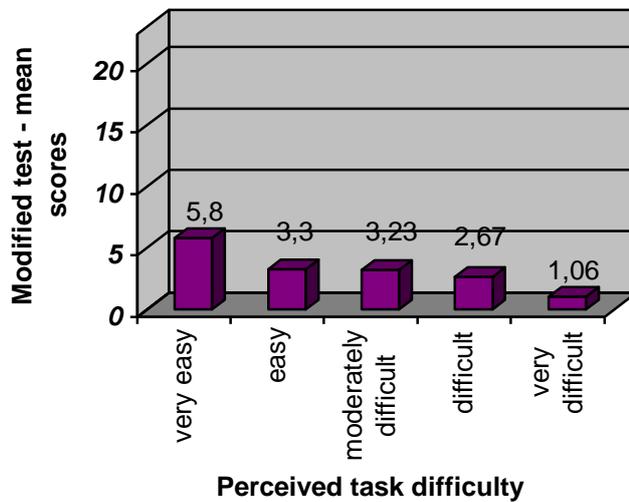
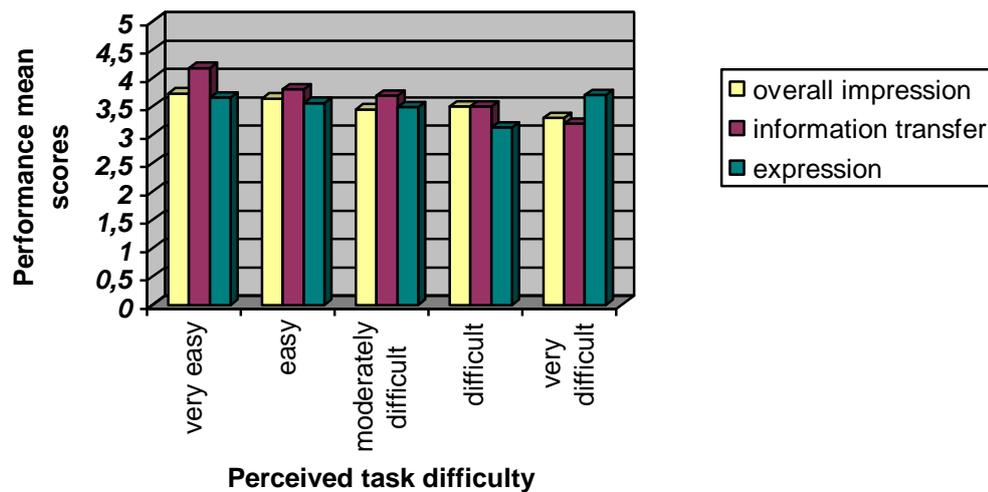
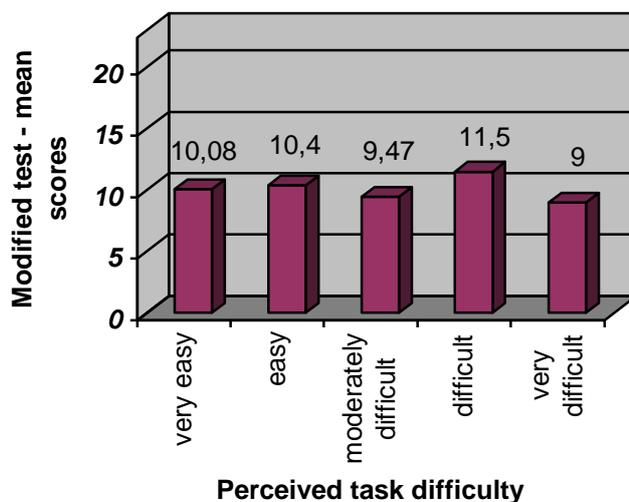


Figure 8 The relation between perceived task difficulty and translation performance in Grade 11



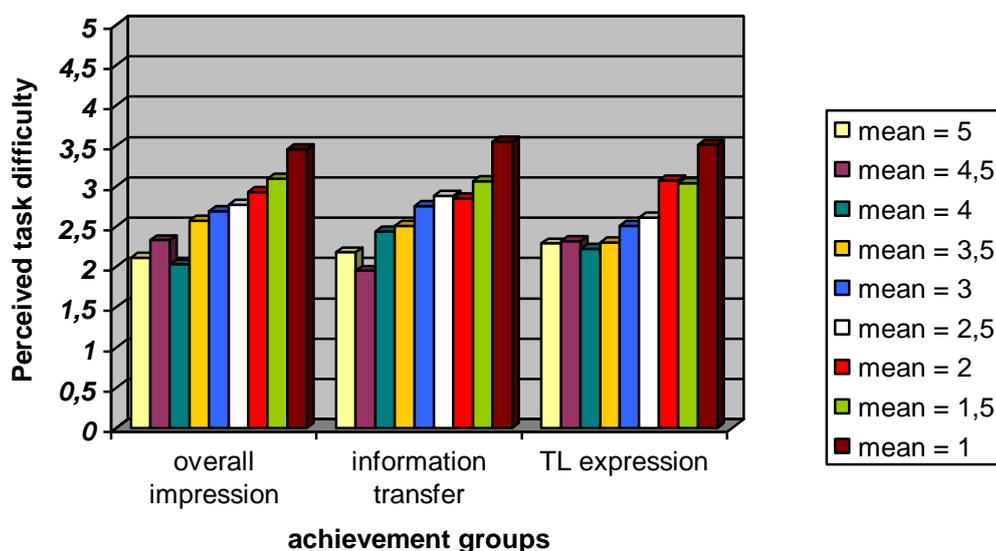
The more balanced distribution of the columns in Figures 7 and 9 reflect the diminishing correlation between performance and perceived task difficulty in grade 11. The loosening association might be explained by the assumption that older students make judgments not only on the base of whether they were successful in solving the task. By the time, they must have had some experiences with other translation tasks and language tests and they might have used these tests as points of reference when assessing the difficulty of the translation task at hand.

Figure 9 The relation between perceived task difficulty and modified test scores in Grade 11



In this age group we came across an interesting phenomenon: the students who perceived the task to be *very difficult* outperformed all other groups in TL expression (Figure 8). This finding persuaded us to investigate the issue in more details. Figure 10 shows how difficult each performance group found the translation task. It can be observed that highest achievers always perceived the task to be slightly more difficult than the high achievers. In case of information transfer, only students with 5 as a mean score found the task more difficult than the slightly less able students, but in the case of overall impression and TL expression both students with 5 and 4,5 as a mean score rated the translation task more difficult than the next performance group.

Figure 10 Perceived task difficulty by achievement groups. (total sample)



The next question was whether the difference in perceived task difficulty between the best students and the good students was significant or not. We wanted to compare the opinions of three groups: those whose performance mean scores were 4; 4,5 and 5. However, the groups

formed this way were so small (7 or 9 subjects in a sub-group) that no further statistical analysis could be performed.

Nevertheless, the phenomenon is not only interesting but can be important, too, as it suggests the significance of underlying attitudes and beliefs, and possibly of metacognitive processes in translation performance. However, without more sophisticated research aiming strictly at the attitudes behind translator’s behaviour, no conclusions can be drawn on this issue.

3.5.10 Problems encountered during the translation process

On the questionnaire students were asked to rate the problems they encountered while preparing the target text. (Problems were identified on the basis of the pilot study.) Students’ ratings of problems inform us about what they recognize as a translation problem, which, in turn, signifies what is in the focus of their attention during the translation process.

Table 48 Problems encountered during the translation process by age group

	ST reception				TT production			Other		
	syntax	word	style	knowlg	style	word	knowlg	time	dict	∅ Other tools
Grade 7. (n= 259)	2,51	3,23	2,21	2,42	2,45	3,1	2,34	3,92	2,25	2,69
Grade 11. (n=209)	1,43	1,92	1,71	1,85	2,39	2,58	1,93	2,31	1,58	1,63
Σ	2,03	2,65	1,99	2,17	2,42	2,87	2,16	3,21	1,96	2,22

The mean values of the ratings of translation problems are presented in Table 48 by age group. As can be seen, “*time*” was the main problem for 7th graders – or at least, that is how they felt. That “*time*” was a real problem is confirmed by the fact that 62,12% of the students in this grade could not finish their translations, while this ratio was only 37% in grade 11. ‘Time’ was followed by *word-level problems* as the second and third most frequent problems. Word-level problems appeared both in connection with understanding the ST and with producing the TT.

11th graders’ evaluations of the problems indicated that they encountered less difficulty than 7th graders. It was only the ‘style of the target text’ that did not show any considerable changes with age. The combined mean value of the problems was 2,72 in grade 7 and 1,93 in grade 11 (Table 49). The difference is significant and it is in line with the results on perceived task difficulty described in the previous subsection.

Table 49 The combined mean values of problems by age group. p< 0,001

	Mean	SD	F(p)	t(p)
Grade 7 (n=259)	2,72	0,76	9,19 (0,003)	11,86 (<0,001)
Grade 11 (n=209)	1,93	0,67		

Finding the suitable TL word is the leading problem in grade 11, which means that word-level problems are still prevalent in this age group. Comprehension related word-level problems, however, lose significance to a large degree. *Stylistic problems in the TL* were the second most highly rated problems and the third problem was ‘*time*’, again.

‘Time’ and word level problems are the primary challenges for students in both age groups, though the relative weight of these problems differs from one age group to the other. On the basis of these findings we may assume that *the dominance of word-level problems is a characteristic feature of natural translation competence*. Our results support the widely held

intuitive beliefs that inexperienced translators and language learners are usually preoccupied with finding the “right” word. The results are also in harmony with Krings’ (1986b) and Lörscher’s (1991) findings, who, in their process-oriented investigations discovered that the most frequent type of translation problems identified by language learners were of lexico-semantic nature.

The fact that word-level problems stand out among ST related reception problems in both age groups, lends support to the assumption too, that language learners rely predominantly on individual words in ST comprehension.

There is no doubt that word-level problems are real for the naïve translator. The problem is that language learners or natural translators usually get stuck on word-level and they do not even realize and identify higher order problems. Consequently, they may not even make any efforts in solving these higher order problems. In cognitive psychological terms we may claim that most of the information processing capacity is occupied by handling word-level problems and there are no free faculties left for perceiving, processing and managing other types of problems.

The problem of time is slightly more difficult to interpret. Shortcomings in language abilities and automation may result in an extremely increased need for time. This may explain why so many 7th graders could not finish their translations and why they thought of the shortage of time as the main cause of their failure.

We must note, however, that ‘time’ is only a surface problem hindering acceptable performance. In reality, there must be some background difficulties that slow down the process. However, it is very difficult to isolate these background problems. All the more so, because, basically, any sort of problems (both language problems and translation problems) can slow down the process. This is supported by the fact that time is a problematic factor for 11th graders too, and as we will see in *Part 4*, even for professional translators. This suggests that time does not cease to be a perceived problem with the growth of translation competence. After having compared the two age groups, we found that, with one exception, students in grade 11 assigned each problem a lower rating than students in grade 7. (The only exception was the ‘style of the TT’). This is in accordance with other findings of this research, that is with 11th graders’ better performance and with the fact that they perceived the task to be less difficult than the younger students.

‘TT style’, which was a relatively insignificant problem in grade 7 in the sense that it only ranked 6th in the order, became the second most important problem by grade 11. It should be noted that the mean value of ‘TT style’ did not change significantly; it was only its relative weight that increased as other types of problems, particularly ST-related and ‘other’ problems lost significance. This, however, means that stylistic problems related to TT formation may be more in the focus of attention in the older and linguistically more able group, which, in turn, may contribute to their higher levels of achievement.

To use the terminology of cognitive psychology again, the modification in the relative order of problems indicates that information processing became more diverse by grade 11. Style emerged as a new type of problem to accompany word-level problems.

3.5.11 Reference materials and other tools

Using the appropriate reference materials and technical aids and using them efficiently is considered to be an essential component of translation competence. ‘On the spot’ translation is sometimes regarded as an improper way of assessing translation competence as it

- a) does not gather information on the use of materials and tools, and
- b) as a result, it may distort performance. (Jääskeläinen, 1999)

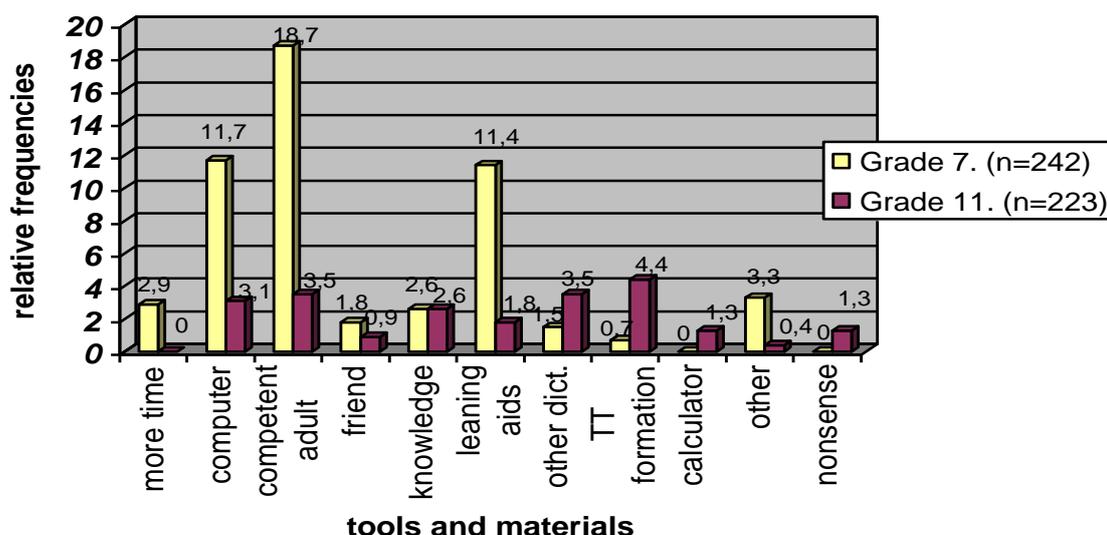
Therefore, we decided to explore whether students had realized the importance of reference materials and technical aids. To pursue this aim, an open-ended question was inserted in the questionnaire, which asked students to think of tools and other resources that would have helped their work. In response, 47% of the students in grade 7 and 20% of the students in grade 11 specified some type of an aid.

The answers were grouped into the following categories:

- (more) time;
- computer/internet;
- a competent adult;
- friend/sibling;
- knowledge/experience;
- language learning materials (course book, exercise book etc.)
- other types of dictionaries (thesaurus, orthography)
- materials helping TT formation (e.g. parallel texts)
- calculators, and tables that assist in converting foot into meter
- other; and
- nonsense (jokes, puns)

In total, 174 items were named by students as translation aids. Figure 11 shows the relative frequencies with which equipments were chosen by each age group.

Figure 11 Relative frequencies of tools and materials by age group



The most striking result that 7th graders often mentioned things that cannot be regarded as tools (e.g. time, knowledge, persons – 26% of all specified resources). As the item on the questionnaire explicitly asked for tools, this outcome cannot be the result of a misformulated question. Their answers clearly indicate that they are not aware of what tools are helpful in translation: in most cases the entities they specified are there to compensate for their poor L2 abilities. They are not distinctively tailored to assisting translation, as a result, further analysis from the perspective of translation studies cannot be accomplished.

Another noticeable finding is the high proportion of computer-related resources in the answers of this age group. This may reflect their unconditional (perhaps ungrounded) belief in computers.

It is remarkable, that by grade 11, there is a considerable increase in the number of positive answers in the categories of ‘other dictionaries’ and ‘materials helping TT formation’. These

findings suggest again, that older students with higher levels of language skills are more aware of the challenges related to the formation of the target text. Unfortunately, the raw number of answers in each category was so small that further statistical analysis could not be carried out.

Interestingly, some 11th graders indicated that they would have used tables helping numerical conversion: they obviously thought of converting English measures of length into SI standards used in Hungary. On the one hand, this can be seen as evidence that more mature students strive at communicating facts in accordance with the requirements of the TL culture. On the other hand, it may be a sign that the very students are unskilled in using dictionaries as such tables are included in them (and many students, indeed, found them).

Table 50 Correlations (Spearman rho) between translation performance and naming additional tools. * p<0,05

	Overall impression		Information transfer		Expression		Modified test score	
	Grade 7 (n=273)	Grade 11 (n=227)	Grade 7 (n=269)	Grade 11 (n=225)	Grade 7 (n=269)	Grade 11 (n=225)	Grade 7 (n=213)	Grade 11 (n = 147)
Naming tools	0,02	0,13	0,03	0,14*	0,06	0,07	0,00	0,06

With the exception of information transfer in grade 11, there was no significant correlation between translation performance and the fact whether a student was ready to name a translation aid or not (Table 50). This result suggests that in this age group and at this level of language and translation competence translation performance is not (yet) related to whether the translator is aware of what materials and tools he or she could use to help his/her work. Information transfer's link to naming additional tools is so weak and isolated that it is difficult to interpret it in the framework of this study. It may be the first sign of growing awareness, but it could just as well be a statistical artefact.

3.5.12 The association between translation performance and some external indices of L2 (English) learning

Two external indices of language learning were investigated in our research: the length of exposure to L2 learning (i.e. how long students had been learning English at the time of data collection) and the number of English classes per week. Ideally, these factors should have an influence on L2 competence and thus, on translation competence, too. As a result, correlation between external indices of language learning and translation competence was tested.

There was a significant positive correlation between length of exposure to L2 and translation performance in both age groups (see Table 51). The correlation, however, was weak even in grade 7 and it further decreased by grade 11.

Table 51 Correlations between length of exposure to L2 and translation performance by age group (Spearman rho) ** 0,01>p; * 0,05>p.

Grade	Overall impression	Information transfer	TT expression	Modified test score
7 (n=270)	0,32**	0,35**	0,35**	0,16** (n=216)
11 (n= 216)	0,19**	0,20**	0,16**	0,17* (n=145)

The association between the number of English classes per week and translation performance shows a similar tendency though the differences between the two age groups are even larger. Whereas in grade 7 there is a moderate, significant correlation between the two factors, no significant correlations were found in grade 11 (see Table 52). (Modified test scores are the

only exception from this tendency but because of their low reliability in grade 11, no further conclusions can be made on the basis of these values.)

Table 52 Correlations between number of English classes per week and translation performance by age group (Spearman rho). **: 0,01>p

Grade	Overall impression	Information transfer	TT expression	Modified test score
7. (n=270)	0,49**	0,52**	0,47**	0,40** (n=216)
11. (n= 216)	0,03	0,06	0,09	0,22** (n=145)

Now we have to turn to the question why indices of L2 learning do not have any remarkable influence on translation performance in grade 11. On the one hand, we may assume that the relative weight of English language competence in translation performance decreases, and at the same time, other factors (e.g. Hungarian language skill, world-knowledge) gain on importance. As a result, background factors influencing English language competence lose significance in relation to translation performance, too.

In the case of the length of exposure to L2, another possible explanation is that the length of language learning (and thus, starting age) does not exert such an enormous effect on language competence in Hungary as it is usually believed by the public. Certainly, a weak correlation exists between length of exposure and language skills in our sample too (see Table 53). Nevertheless, Johnstone (2004) in his review of the issue emphasizes the multitude of factors other than starting age that influence the success of language learning. Our results give support to views that try to de-emphasize the starting age in language acquisition: several other factors may compensate for a later start. Translation performance appears to be even more independent of it than other language skills, probably because of its close links with other factors mentioned above.

Table 53 Correlations between external indices of L2 learning and language skills by age group. (Spearman rho). **: p<0,01

	L2 reading		L2 listening		L2 writing	
	Grade 7.	Grade 11 (n=186)	Grade 7.	Grade 11.	Grade 7.	Grade 11.
Length of exposure	0,33**	0,37**	0,32**	-0,42	0,36**	0,29**
English classes per week	0,10	0,45**	0,22**	0,13	0,28**	0,45**

It is somewhat surprising that the number of English classes per week shows no significant correlations with translation performance, though it is moderately and significantly correlated to L2 reading and writing. The implication of this finding, once again, is that 2nd language skills do not play such an important role any more in translation.

3.5.13 Translation in English classes (as perceived by the students)

When translation is applied in language teaching it is usually referred to as school translation (Malmkjaer, 1998). In this case, the aim of translation is to help the acquisition of a foreign language. School translation is a much debated type of activity in language teaching methodology, but both translation scholars and language teachers agree that it has not much to do with communicative translation. Consequently, our hypothesis was that the frequency of translation in the foreign language classroom would not be related to communicative translation performance.

Results indicate that translation is a recurrent activity in the Hungarian language classroom – or at least this is how students feel. Younger students come across more translation than older

students and the slight difference is significant (Table 54). It is interesting to note that there is a moderate, significant correlation between the frequency of translational activities in the two directions ($r = 0,44$, $p < 0,01$), that is, in the classes where there are lots of translation tasks from English into Hungarian, it is likely that there are translations from Hungarian into English too, and vice versa.

Table 54 Frequency of translation in English classes by age groups (1 = never, 5= in each class) as perceived by the students

	From English into Hungarian	From Hungarian into English
Grade 7. (n=273)	3,71	3,5
Grade 11.(n=218)	3,43	3,15
Total (n = 491)	3,59	3,34
F(p)	0,15 (0,70)	8,89 (0,03)
t(p)	3,77 (0,001)	4,51 (0,001)

We found no significant correlations between the frequency of translation in the classroom and translation performance in grade 11. Contrary to expectations, however, there was a slight but significant correlation between translation performance and frequency of translation in English classes (Table 55).

**Table 55 Correlations between translation in class and performance in grade 7. (Spearman rho)
: 0,01>p

	Overall impression (n= 269)	Information transfer (n= 269)	TT expression (n= 269)	Modified test score (n=219)
From English into Hungarian	0,25**	0,23**	0,22**	0,05
From Hungarian into English	0,21**	0,2**	0,19**	0,12

We also examined whether there were connections between the frequency of translation and other language skills in this age group. Significant correlations were found only between L2 reading skills and the frequency of translation activities, and the correlations were just as weak as those with translation performance (Table 56). An implication of this finding is the possibility that the three factors, that is the frequency of translation tasks in the language classroom, L2 reading skills and translation performance are interrelated in this age group. This also accords with our earlier observation, which showed that L2 reading and translation are closely associated (see *Section 3.5.5*). Furthermore, it can be assumed that school translation may contribute slightly to the development of L2 reading comprehension in the beginning of foreign language acquisition, which, in turn, may have a positive effect on translation performance.

In grade 11 no significant correlations were found between the frequency of translation as a language learning exercise and foreign language skills. The lack of significant correlations in this age group confirms the hypothesis that scholastic translation does not directly foster the development of language skills or communicative translation competence.

Table 56 Correlations between translation in class and other L2 skill in grade 7. ** p<0,01 * p<0,05

	L2 reading (n = 197)	L2 listening (n = 186)	L2 writing (n = 186)
From English into Hungarian	0,18**	0,01	0,11
From Hungarian into English	0,16*	0,13	0,05

We must not forget, however, that we could solely rely on students' subjective accounts of the frequency of translation activities in class as we had no opportunity to collect observational data. Obviously, more research on this topic needs to be undertaken before the association between the factors studied here is more clearly understood.

3.5.14. Factors determining translation performance

After having found several significant correlations between translation performance and background variables, we wished to reveal cause-and-effect relationships between these variables and translation performance. As a result a series of regression analyses were performed in both age groups. Regression analysis was carried out only with variables that showed at least moderate significant correlations with translation. In grade seven, these variables included: gender, parents' educational qualifications, inductive reasoning, L2 reading, writing and listening, perceived task difficulty, two attitude factors (language learning self-concept and enjoyment and usefulness), length of exposure, number of English classes per week and frequency of L2→L1 translation in class. Results of regression analysis are shown in Table 57.

Table 57 Summary of regression analysis for variables predicting translation performance in grade 7. (n=269)

Effect $r\beta\%$	<i>Dependent variables</i>			
	Overall impression	Information transfer	Expression	Modified test score
<i>Independent variables</i>				
gender	2,3	Ns	3,64	Ns
Father's qualification	Ns	Ns	ns	Ns
Mother's qualification	6,84	5,25	6,82	Ns
Inductive reasoning	4,81	Ns	7,14	Ns
L2 reading	23,12	22,08	20,77	27,68
L2 listening	Ns	Ns	Ns	Ns
L2 writing	Ns	Ns	Ns	Ns
Perceived difficulty	Ns	Ns	Ns	Ns
Length of exposure	ns	13,57	Ns	17,05
No. of classes per week	9,72	Ns	Ns	Ns
L2→L1 translation	4,95	Ns	ns	Ns
Lg. learning self-concept	9,36	7,65	9,69	ns
Enjoyment & usefulness	ns	ns	ns	ns
$R^2\%$	61,1	48,55	48,06	44,73

Ns. Non-significant

Regression analysis brought evidence that it is *L2 reading* that plays the most important role in determining translation performance in this age group. Language learning self-concept and mother's qualification contribute to performance systematically, too. Gender and inductive reasoning influence overall impression and expression, but not information transfer. External indices of language learning show an unforeseen pattern: the number of classes per week plays a part in overall impression and length of exposure is a factor in information transfer and the modified test. It is impossible to find a plausible explanation for this arrangement of

results, and it is similarly difficult to explain why exactly overall impression is effected by the frequency of L2→L1 translation, and not other dimensions of performance.

In sum, nearly 50% of achievement is explained by the factors investigated in the study – in case of overall impression, it is above 60%. This can be seen as quite a good proportion given the complex nature of translation competence.

Findings are not that positive in grade 11 where only a considerably smaller proportion of performance could be explained by our variables (see Table 58). The most striking finding is that L2 reading's effect has disappeared with the exception of overall impression, and even there it is much smaller in magnitude than in grade 7. A possible explanation for this is the relative easiness of the text from the point of view of reading comprehension. Parallel to this, L2 writing appeared as a factor influencing performance. Language learning self-concept is equally influential in all dimensions at this age as in grade 7, and the effect of gender remained stable, too. Interestingly, inductive reasoning in grade 11 is related to information transfer.

The explained variance is between 11,22% (information transfer) and 31,70% (Expression), which shows that the variables included in the analysis could only detect key factors determining translation performance at this age only with limited success. The reason for this may be that the effect of L2 reading was minimized by giving a relatively easy text, but the factors that influence performance in such a situation were not incorporated in the study. It is most likely that *L1 writing* and perhaps other related L1 skills play a role in it.

Table 58 Summary of regression analysis for variables predicting translation performance in grade 11. (n=219)

Effect rβ%	<i>Dependent variables</i>			
	Overall impression	Information transfer	Expression	Modified test score
<i>Independent variables</i>				
gender	4,83	Ns	6,96	Ns
Father's qualification	Ns	Ns	Ns	Ns
Mother's qualification	ns	ns	Ns	Ns
Inductive reasoning	Ns	4,84	Ns	Ns
L2 reading	8,6	Ns	Ns	Ns
L2 listening	Ns	Ns	ns	Ns
L2 writing	10,25	Ns	18,36	20,58
Perceived difficulty	Ns	Ns	Ns	Ns
Length of exposure	ns	Ns	Ns	Ns
No. of classes per week	Ns	Ns	Ns	Ns
L2→L1 translation	Ns	Ns	ns	Ns
Lg. learning self-concept	7,44	6,38	6,38	Ns
Enjoyment & usefulness	ns	ns	Ns	ns
R ² %	31,12	11,22	31,7	20,58

Ns. Non-significant

3.6 A summary of the findings of the quantitative investigation

In the beginning of *Part 3* the following objectives were set for the study:

- 1) To find evidence that natural translation competence exists
- 2) To prove that this competence develops as communicative competence grows
- 3) To identify background variables which influence the development and the functioning of translation competence.
- 4) To find a valid and reliable method for assessing translation competence

In this section, findings will be summarized with reference to the objectives they are related to.

Evaluation methods

Three evaluation methods were tried in our study: error-analysis, positive evaluation and holistic evaluation.

Error-analysis was rejected after the pilot study primarily because of its predicted inefficiency in large-scale surveys. Inefficiency in this context means massive investment in terms of time, energy and money with questionable gains. The main shortcomings of error-analysis were its unrelatedness to other methods, the over-representation of TT errors and its failure to account for untranslated text segments.

However, it cannot be concluded that error-analysis is in itself an ineffective method, but that it was simply not suited for the design of our study. It is very probable that error-analysis can be a valuable method in small-scale investigations, in formative evaluation, or if error-categories were re-defined.

The testing of *positive evaluation* brought ambiguous results. It turned out to be extremely challenging to design a satisfactory test that is both valid and reliable. Particularly, problems above word-level are very difficult to define and it is similarly difficult to decide whether the problem has been solved or not. As a result, employing two raters cannot be spared in positive evaluation. However, once the test was ready, it was very easy to work with it: correction was less time-consuming than in the case of error analysis and statistical analysis was made possible.

Factor analysis of our positive test did not fully support the psycholinguistic reality of Nord's translation problem categories, but it brought some evidence that problems can be divided into two large groups: those requiring creative and those requiring conventional solutions.

Holistic evaluation proved to be a useful tool in our large-scale survey. Validity was ensured through descriptors, and this was paralleled with high interrater reliability indices. Holistic evaluation cannot provide a detailed picture of translation competence but it is very well suited for the characterization of developmental tendencies in large scale samples. Holistic evaluation brought meaningful results and associations with other variables.

The existence of natural translation competence and its development

Our results supported the views that translation is a competence that begins to develop as soon as a second language competence begins to form in the mind. Nevertheless, performance on the translation task suggests that translation competence is in a fairly embryonic form in year 7. There is a huge development between grade 7 and 11 but on the basis of data collected in our study it is impossible to tell what proportion of this growth is accounted for by an advance in language skills, an increase in world-knowledge and by gaining experience in translation itself.

The findings suggest that information transfer is more developed in both age groups than expression. Concentrating on conveying correct information in whatever form could be a characteristic of natural translation competence, but further research is needed (e.g. comparison with professionals) before a definite statement can be made on the issue.

Variables related to translation competence

Results concerning background variables of translation competence will be discussed with reference to the PACTE model, as this was chosen to be the framework of our study and as this is the only model we know that can, in fact, incorporate our findings.

Strategic sub-competence could not be studied in the large-scale survey. Because of the nature of this sub-competence, it is process-oriented research that can offer some insight into its workings.

Two further sub-competencies, knowledge about translation and instrumental sub-competence could not be studied directly either. Examining *knowledge about translation* would require the use of an additional questionnaire or interviews. However, taking into account the age of the population and the amount of experience they have had with translation it is improbable that it would be worth the effort to collect data on this factor. Natural translators are not likely to be aware of theoretical considerations relating to translation and they are not expected to be either. Obviously, intuitive insights may help the natural translator to maximize his or her performance but this, again, can be best detected in small-scale surveys by interviews.

Nevertheless, the rating of different types of translation problems on the questionnaire provided indirect data on a certain aspect of students' insights into translation. On the basis of these data, it can be concluded that word-level problems are in the natural translator's focus of attention. With growing age and experience somewhat more attention is given to stylistic problems.

Studying *instrumental sub-competence* is a problematic issue even in small-scale process-oriented research, as it is so multi-faceted and hard to control. The design of our study, that is, providing students with dictionaries, made the variable constant in the sense that subjects did not have the opportunity or the necessity to choose whatever reference material. The know-how and the effectiveness of using dictionaries, however, can only be researched in TA studies. However, the item on the questionnaire asking for additional tools that could have helped translation offers some insight into students' awareness of the importance and types of reference materials. The fact that most students could not name any further tools implies a lack of consciousness regarding translation aids. Even the proposed tools are usually not translation-specific. Nevertheless, there are signs of growing awareness in year 11, but these signs are rather sporadic.

Our investigation provided strong evidence for the inclusion of *bilingual sub-competence* in translation competence. Both correlational analyses and regression analyses supported the claim that language competence plays a major role in natural translation competence. *L2 reading* was the factor found to be most closely related to translation performance in grade 7, but reading's role diminished by grade 11. This was explained by the simplicity of the ST: it did not differentiate between older students from the point of view of L2 reading. This is not a problem, as we set out to assess translation competence and not reading competence. Further explanations are, however, blocked by the fact that we had no opportunity to gather information on L1 related skills. Further research in this field would contribute to a great extent to clarifying what factors influence translation performance in more advanced language learners.

In addition, it should be underlined that different types of texts with differing levels of difficulty may call for different configurations of translation competence. As a result, the weight of L1 and L2 related individual skills may vary from situation to situation.

At present, we have no means of studying *extra-linguistic competence* because the issue is simply too complex. The weak to moderate correlations between academic achievement and translation performance in our study may indicate the importance of underlying general

knowledge, but as it is not clear what academic achievement in terms of grades reflects, these correlations might as well refer to the impact of an underlying factor, e.g. general intelligence. Some minor but important findings are related to the category of *psycho-physiological sub-competence*. This is a category, whose elements are seldom studied in translation research, as a result, it seems to have an all-inclusive character: everything is pushed in here that is supposed to have a part in translation but that cannot be fitted into other categories. Cognitive and motivational issues are supposed to belong here, just like personality traits and physiological potential not studied in this research.

As for cognitive components, we found that *inductive reasoning* plays a minor but stable role in translation performance. This was evidenced by both correlational analysis and regression analysis. In addition, the results of regression analysis suggest that inductive reasoning is directly related to translation and not only by simply influencing other factors.

Perception of task difficulty was significantly related to translation performance in grade 7 but not in grade 11. Task difficulty is a factor often studied in motivation research but not in translation studies. Further investigations would be needed to reveal how perceived task difficulty influences the translator both in terms of motivation and in terms of metacognitive awareness devoted to the task. It should be noted here, that motivation in translation is on the whole an underresearched issue that would deserve significantly more attention.

The fact that weak to moderate correlations were detected between *attitudes* and performance support views that translation competence has non-cognitive components. The most important attitudes were the ones related to language learning, and particularly the factor language-learning related self-concept. Regression analysis implied a moderate and consistent effect of language-learning related self-concept on translation performance, which, again, underlines the importance of psycho-physiological factors. It should also be mentioned that some gender differences could be observed in the association between attitudes and performance, which deserve further investigations.

Finally, there were some interesting findings that could not be related to the PACTE model. They are related to factors outside translation competence. A group of these factors concerns external indices of language learning. These variables were found to have inconsistent relationships with translation performance. This is probably linked to the issue of language competence and the effectiveness of language teaching.

Gender and parents' educational qualifications were found to be associated with translation performance, moreover they seem to cause certain variances in performance. Whereas parents' educational qualifications are irrelevant in a professional setting, gender differences could be an interesting problem to investigate with more experienced samples.

We are aware of the fact that findings of our study are of limited value to translation studies as language learners are usually not in the focus of research interest. However, we hope that the design and the findings of the research may serve as an example for further initiatives investigating professional translation competence.

4. QUALITATIVE INVESTIGATIONS INTO THE NATURE OF TRANSLATION COMPETENCE AND ITS DEVELOPMENT – PROCESS ANALYSES (THINK ALOUD PROTOCOLS AND PAIR TRANSLATIONS)

To get a more precise picture of the development of translation competence the quantitative survey was complemented by a process-oriented qualitative research. As we have seen in *Section 2.5*, this type of investigation has a long established tradition in translation research by now, although problems and limitations have been highlighted as well. Unfortunately, some of these limitations cannot be overcome by present research techniques (some of these limitations are referred to in *Section 4.2.2* below). However, there are no other methods to study certain aspects of translation competence (i.e. those relating to process) at present.

The qualitative investigation has produced a huge amount of data, a complete analysis of which would go far beyond the limits of a PhD-dissertation. Consequently, certain aspects of analysis had to be selected for the present work while others were left for later analysis. When selecting issues to focus on in the present study, we aimed at creating harmony with the quantitative research. As a result, we decided for a detailed analysis of the translator's observable behaviour. Objective indicators of observable behaviour are relatively easy to define, they can be detected and examined more or less impartially and they can easily be expressed in numbers (e.g. temporal aspects of translation). No interpretation of the content of the protocols is necessary to arrive at these data. Nevertheless, references will be made to the monologues and dialogues throughout the analysis to support the categories established and the assumptions made about background processes.

In this part of the dissertation first aims and objectives of the process-oriented research are presented, then the research design and data collection are described. This is followed by the analysis of the objective indicators of the translation process, and finally a summary of the main findings is given together with suggestions for further qualitative analysis.

4.1 Aims and objectives

The most important aim of our research was to find out how observable aspects of the translation process differ in four different populations: secondary school students (upper-intermediate language learners), university students of English (advanced language learners), students in translation courses and /semi/professionals. Differences in processes are thought to illuminate the developmental path of translation competence, or at least, one possible way of development. Consequently, the following aspects of the translator's behaviour were analyzed:

- temporal aspects;
- reading of the ST prior to translation;
- reading the translation brief prior to translation;
- number of run-throughs;
- use of reference materials.

Although the product created by the process is usually not taken into account in process-oriented research, some previous results (e.g. Jääskeläinen, 1999) suggest that it might be important to examine the quality of the TTs produced and link it up with other process-related factors. As a result, a further objective of our study was to find associations between performance and process characteristics.

In addition, we had a methodological aim too, inspired by researchers who criticized think-aloud protocols being too artificial (see *Section 2.5.3.4*). As thus far, no systematic research has been carried out to test peer translation as a method and to compare it to thinking aloud, we decided to gather information on how think-aloud protocols and peer translations differ as data collection methods and to discover what the advantages and the disadvantages of each method are.

4.2 Research Design

4.2.1 Subjects

32 subjects volunteered to participate in the study. We must note, however, that it was rather difficult to recruit volunteers for the project. It is probably a threatening experience for many people to be analyzed by another person. The danger of losing prestige must be higher for professionals, and perhaps for translation students as well, than for language learners. The fact that professionals and translation students were more likely to say no to our invitation or to postpone the recording again and again until we gave up, seems to support this argument. We must not forget, however, that people in these two categories are usually already in the world of work, and as a result, they are under severe time-pressure. Lack of time may have contributed to their unwillingness.

A certain 'stage-fright' might have been the other reason that led some people to deny participation. Even some of the subjects mentioned the initial unease they felt in front of the microphone.

These problems call attention to a serious limitation of the study (and probably of other TAP studies too): the sample is pre-selected by certain personality factors: our subjects seemed to be helpful people with high levels of curiosity (they usually expressed interest in the study and wanted to see the results) and risk-taking. Most of them also appeared to be rather outgoing characters, too. These are, however, only the subjective impressions of the researcher, as no personality tests were carried out.

The sample is presented in Table 59.

Table 59 The sample of the qualitative study

	TAP	PT
Secondary school students	4 (2 fem + 2 males)	2 (both female pairs)
English majors	5 (4 fem + 1 male)	3 (female pairs)
Translation students	4 (2 fem + 2 males)	3 (2 mixed and a female pair)
/semi/professionals	3 (2 fem. + 1 male)	-

As for gender, females were seemingly overrepresented in the sample (24 females and 8 males), but this is no wonder if we take into account the female dominance among philology majors at Hungarian universities. We would rather suspect that males took part in the experiment in a larger proportion than what would have been expected on the basis of their relative amount at the courses. As no exact numbers were collected on the gender distribution of students at the time of the experiment, these are only speculations on the part of the researcher.

Although we made efforts to create small but homogeneous sub-samples, each subgroup shows a certain kind of diversity because of the recruiting difficulties described above.

High school students are the most homogeneous group. As there was a danger that secondary school students wouldn't be able to translate because of language problems, subjects in this

group had to be selected carefully. Based on the results of the pilot study described in Part 3, eight students from grade 11 were chosen to participate in the qualitative investigation. Consultations with their English teacher reinforced our choices. The only problematic person in this group was Meg who could not complete the data collection procedure due to a series of illnesses.

English majors are heterogeneous from several points of view. At the time of the recording there were students from Year 1 (1), Year 3 (5) Year 4 (2) and Year 5 (3). This suggests that their language competence must have been varied too. However, as we had no opportunity to test their language skills, we could not control this factor. The most problematic person from this aspect is Wendy (Year 1 student) but fortunately she worked in pair with a Year 4 student in the second semester, so we hope that the older student's presence made up for the deficiencies a first year student might have had and that their work can be compared to the work of the other English major pairs (Year 3- Year 3).

Translation students formed a heterogeneous group, too. Most students attended a post-graduate program at the English Department of the University of Szeged. Accordingly, they were all part-time, graduate students, usually in their late 20s or early 30s. Most of them had a full-time job, typically as an English teacher. At the time of data collection three students were in the second (final) year of their training six of them were in the first year (second semester).

There was, however, an exception from this pattern. Ron was a medical student in the third year of his studies, who also participated in a special program for medical communication at the Language Centre of the University. His program involved translation training, too. Ron was an undergraduate, about 5-10 years younger than the other translation students and had never studied English philology. It is not clear how these factors affected his processes and performance, but as we will see, his profile is much closer to those of English majors than to those of translation students.

Another problematic person in the group is Ivy, who was in the 2nd year of her translation studies at the time of the data collection, but she had already completed another translation course at another university, she had worked regularly as a translator previously and she was a guest lecturer at the Teacher Training College when she volunteered to think aloud. Ivy prepared one of the best translations according to every evaluator and she distinguished herself with a remarkable sensitivity and awareness regarding theoretical issues of translation. Because of formal criteria, she was classified as a translation student, but her case clearly demonstrates the dubious nature of these criteria.

Interviews brought evidence that the other translation students differed in their previous experiences with translation, too.

Professional translators formed the most problematic group as it was nearly impossible to persuade a professional to participate in the project. The main reasons for this were probably fear of prestige loss and lack of time. The three translators who were finally willing to think aloud should rather be called semi-professionals as they were all employed as full-time university professors at the time of data collection. Furthermore, they were or had been involved in the translation business and taught translation at some point in their career. Nevertheless, there is a problematic subject in this group, too. Lily, who had taught translation before, had hardly more real life experience with translation than some students.

The small size of the sample and the heterogeneous nature of the sub-groups call for a cautious interpretation of the results.

4.2.2 Data collection procedures

Three sessions were needed to collect data with each subject.

The first session was a **training session** where we described the study briefly to the participants and then explained what thinking aloud and peer translation were and what we expected them to do. Then students in peer translation were instructed to practice at home and make a tape-recording as a test, so that we could listen to it and see whether they did what was expected of them.

The training session was slightly longer for think aloud subjects as thinking aloud is not as natural as discussing problems with a partner, and as a result it had to be learned and practiced. Based on Ericsson and Simon (1985, 1999) two-digit mental counting tasks were given to subjects first to illustrate the technique and then to practice it. The same handout included verbal and numerical analogies and series and some English sentences they had to translate. Subjects had to take home the handout and practice thinking aloud. They were also instructed to use thinking aloud as often as possible in their daily routines like cooking or driving. Before they left the first session they could listen to a segment of a think aloud protocol of translation (recorded by the researcher) too. The source text and the target text were, of course, provided. Think aloud subjects were also asked to make a test-recording at home.

The learning period lasted usually one to two weeks and then **the main session** took place.

The test recordings were of great use, though there were only 3 cases when the experimenter had to give extra instructions to the subjects. A pair of university students of English misunderstood the task and were engaged in analysing syntactic phenomena. The experimenter explained that they had to concentrate only on what they perceived as translation problems.

The other subjects were typical problematic think aloud subjects having long pauses in their recordings and not really verbalizing their thoughts, but mostly saying only strings of target language versions. They were explicitly instructed again to verbalize as much of their thoughts as they could, and to start talking when they hear their own silence. As we will see later, the problem was not completely solved. The quality and the quantity of the verbalizations varies to a great extent from individual to individual and in our opinion, certain background factors (e.g. fluency of speech, cognitive style, metacognition and certain personality traits) might have a serious impact on the actual speech performance. These problems are, however, so complex that they could only be further investigated in another study.

Most of the main sessions took place in an office in the university building. The subjects had to translate a short news item from Reuters and they had to follow the instructions given in the translation brief.

The protocols and the discussions were either tape recorded or recorded digitally on the computer. In most cases, subjects typed their target text directly into Translog (see *Section 4.2.2.1* for further explanation). This was not possible with the secondary school students who lived and prepared the translations in the neighbouring town and technical facilities did not allow using computers.

The participants were allowed to use the Ország English-Hungarian Dictionary (2 volumes), the Oxford Advanced Dictionary, Ország Hungarian-English Dictionary and a guide to Hungarian orthography. The competent use of reference materials is a major component of the translation competence model accepted by us (see the PACTE model in *Section 2.3.2.2.7*), as a result, it would have been a mistake to exclude it from the study. We also wanted to gather information on how the sub-groups differed in using reference materials. The

dictionaries offered were all printed because secondary school students could not use a computer while preparing their translations. Even if they could have had access to computers, there was a danger that they could not have been able to use electronic dictionaries because of a lack of practice and routine.

However, some translation students and professionals complained about 'having forgotten' how to use printed dictionaries and also, about the lack of internet resources. Nevertheless, as secondary school students had no access to internet, such provisions could not have been made without creating unequal circumstances for the different sub-groups.

The experimenter was not in the room when the recording took place but she was available in the foyer if any problems had occurred. The benefits and drawbacks of the experimenter's presence were weighed carefully beforehand, and we decided to leave our subjects alone. The reason for this was that many of them indicated that the observer's presence would have been another inhibiting factor possibly further modifying their natural behaviour and their cognitive processes. Some subjects even declared that they would not have participated if the researcher had been present. Participants' unease with the presence of the observer was reported by House (1988) too. Under such circumstances it seemed wiser to be absent from the main session. All the more so, as this is not a requirement according to Ericsson and Simon (1999) either. Bernardini (2001) suggests staying away from the sessions to minimize social interactions with subjects as they may interfere with cognitive processes.

Not being present, however, meant that we had no opportunity to urge our subjects to verbalize when they remained silent for longer periods of time.

There was an additional occasion about one or two weeks after the main session when we met the subjects again and they could **revise** their TT. These protocols were audio recorded and logged again. On this occasion an **interview** was made with the subjects, as well, touching upon the following issues:

- how difficult the translation task was;
- how difficult it was for them to think aloud/work in pairs
- how thinking aloud/working in pairs influenced the translation process and the product
- if they liked translating;
- experiences with translating (how often they translate, what kind of texts)
- translation-related self-concept (whether they thought they were good at translating, what their strengths and weaknesses as translators were)
- subjective translation theory (what is translation, what characteristics a good translator has, what is a good TT like; what is difficult in translation, what is beautiful in translation)
- how important translation is in language teaching/learning (scale of 1-5; differentiate according to levels)

The aim of the interview was to gather information on background factors that might have an influence on translation strategies or that can be associated with certain mental processes. While we were making the interviews it turned out that they provided a rich data in themselves as they highlighted similarities and differences in different subgroups' translation concepts.

4.2.2.1 Data collection techniques and transcription

Thinking aloud and peer translation sessions were audio recorded, digitalized and transcribed. Most of the transcriptions were completed by the researcher but university students had to be involved in the project, too. The reason for this was the huge amount of information gathered. The total length of the recordings was over 26 hours. Transcribing is a meticulous task, particularly if a recording happens to be of poor quality or the subject speaks in a low voice,

murmurs or stutters, or if the two subjects keep talking at the same time. This explains why TA-studies are usually carried out on small samples.

Transcribing is frustrating from another point of view, too: it is already a selection of information and inevitably leaves the researcher with a feeling of loss as there is no way to represent linearly (graphically) what was said and *how* it was said in the sessions. Nevertheless, we aimed at a transcription as thorough as possible, because we wanted to ensure keeping as many information in writing as possible for further analysis, too. In consequence, some of the transcription efforts may seem superfluous from the perspective of the present study, but we hope to make use of them in later analysis.

As for transcription conventions, the tradition of translation-specific TA studies (primarily Jääskeläinen, 1999 and Krings, 1986b) was followed with some modifications. Most of the modifications were related to noting down the temporal aspects of speech, notably silences. In previous studies, one second was the limit under which silences were not measured. Technical development enabled us to measure pauses shorter than a second. This was an advance from a certain aspect because pauses as short as 100 milliseconds or even less may indicate disruption in speech and refer to some underlying cognitive action, if they are at an unexpected point. On the other hand, the possibility of assessing pauses raised the question whether all gaps (e.g. 'normal' pauses at sentence boundaries etc.) should be measured and written down or not. Another question concerned the minimal length of the pauses that should have been assessed and noted. After some experimentation with 'total transcription', we decided to measure only unexpected pauses and use traditional punctuation signs where normal pauses occurred. The reasons for these were the following:

- Our research did not focus on speech rate but most of the data produced by total transcription reflected the speed of speech, a relatively irrelevant information for us.
- The time of transcribing increased considerably
- The transcript became nearly unreadable as it contained more numbers than words
- The numbers did not express any meaningful information for us, so they were simply distracting the eye from useful information.
- Objective numbers expressing silences turned out to be relatively invaluable as the length of normal pauses showed great individual variability depending on general speech rate. As a result, inter-individual comparisons became impossible.

Regarding the minimal length of silences, we decided that pauses shorter than 100 ms were not measured but symbolized by empty parentheses in the transcripts.

Transcription signs are presented in Appendix 14.

In addition, we decided to use *Translog* to supplement audio recording. *Translog* is a computer program developed by Jakobsen and Schou (Jakobsen, 1999 and Jakobsen and Schou, 1999) that logs the keyboard activity of the translator while he/she is working on the translation. *Translog* data can be viewed in two forms: we can either replay the whole process (speeding it up if necessary) or we can view the linear representation of the logged data. In this latter case cursor movements, non-alphabetical keyboard activities (delete, copy etc.) and time-delays are represented by symbols and numbers. Although *Translog* provided useful information, the scope of the present study does not allow for a comparative analysis of TA and *Translog* data. Analyses in the dissertation are based primarily on TA figures.

In addition, as already mentioned above, interviews were made with the subjects to determine how thinking aloud or working with a partner might have affected their performance. These interviews were also tape recorded and transcribed.

4.2.3 Text selection and the translation brief

From the perspective of studying translation processes the issue of text typology and text selection is not less problematic than for competence assessment. We can assume that translation processes change not only with growing experience in general but that

- (1) different text types may pose different problems and require different (unique) strategies
- (2) the subject's experience with a particular text type may influence the strategies he or she chooses in a particular situation. This was reported by Laukkanen and Tirkkonen-Condit (1996) (see *Section 2.5.3.2.2*).

As little is known about how text type influences translation processes we will not be able to generalize our findings to text types other than the one used in this study.

When selecting a text for the think aloud protocols we used mostly the same criteria as in the quantitative study. These were as follows:

- a realistic translation task had to be created with a translation brief
- a text had to be selected that was likely to be translated;
- the text had to be short but complete.

However, as we had a wide variety of subjects concerning second language competence and presumably translation competence, we had to find a text which secondary school students could cope with and was still a challenge for professional translators. This meant that we had to decide for some general text. As Jääskeläinen's study (1999) was in many respects similar to ours, we took her text selection strategy as a model.

Jääskeläinen had her subjects translate an article from the *New Scientist*. The subjects were told that the TT would be published in a Finnish daily newspaper. Jääskeläinen chose an easy text on purpose because she wanted her non-professional subjects to succeed with the translation task.

In a similar vein, we decided to look for a short and relatively easy newspaper article. However, in Jääskeläinen's study the function of the TT was slightly different than that of the ST because the audiences of the two media were different (highly educated people but not necessarily scientists vs. laypersons). Consequently, the subjects had to change style and lexicon to a certain extent, if they wanted to produce an appropriate TT. Such a complication of the task would have made translation too difficult for secondary school students (and perhaps for English majors, too) so we decided for a simple news item as a ST. The last page of the local daily paper usually contains a few short pieces of news from all over the world. We chose a short news item from Reuters' homepage which could be easily imagined to be translated for the local newspaper. (The text can be read in Appendix 15)

The translation brief is usually the description of the situation the experimenter thought out. In our case it is partly modelled by Jääskeläinen's translation brief, but on the other hand it is adapted to the text and context of the translation situation. (The translation brief can be found in Appendix 16)

4.2.4 The data

As we had no opportunity to record all types of data with all subjects (see *Section 4.2.2*), and as some technical problems occurred (tape got caught, computer frozen or configuration changed), subjects differ as to what types of data we eventually have of their translation processes. The types of data we have by subjects are summarized in Table 60. Transcripts and the translations are provided in the DVD attached to the dissertation (or see Appendix 17 and 18).

4.2.5 The evaluation of translations

Although it is not usual to evaluate the produced translations in process-oriented research, already Jääskeläinen (1999) indicated the benefits of including the quality of the TTs as a variable: quality indices can be related to translation processes. Normally, subjects in process-oriented studies are grouped according to formal criteria like the course attended or the degree obtained. A degree, however, not necessarily guarantees good performance, whatever the reasons for this might be. As a result, a further factor arises in addition to expertise that might be of interest to translation studies, and this is the quality of the TTs. If we have information on how well translators have worked, we will be able to find out

- whether translation performance improves with experience
- what processes differentiate between high achievers and poor achievers within the same experience group.
- What processes may compensate for a lack of experience and help the subject produce an extraordinarily good translation.

Consequently, we decided to have the translations evaluated, although the evaluation procedure was far less sophisticated than in the quantitative study. Three raters were involved in the study: a professor at the English Department of the University who taught translation, a professional translator whose work included revising, as well, and an editor of a daily paper (though in another region of Hungary) who did not speak English at all. They were all asked to evaluate the translations on a 3-point scale: good (3), mediocre (2) and poor (1). They were also asked to spell out the best translation.

4.2.6 Data Analysis

The size of our sample and the nature of the central problem of the research (i.e. the translation process) called for a qualitative analysis of the data. In addition, whenever it was possible, we attempted to carry out quantitative analysis, too. Statistical analysis is believed to be important in going beyond mere speculations in translation studies.

However, the outcome of this twofold effort is an intermingling of the two methods of data analysis. To avoid misunderstandings, allusions are made to the analytical techniques used in specific sections.

Finally, a limitation of the study should be mentioned here. Because of the small sample, caution must be applied when generalizing the findings of our investigations. Generally, the outcomes of our interpretations and analyses should be handled as hypotheses.

Table 60 A summary of subjects and types of data collected. Secondary school students and English majors

group	Secondary school students						English majors							
names	Rachel	John	Meg	Greg	Ebeneser + Insane	Mary + Kitty	Joan	Susan	Pam	Alice	Tim	Wendy + Jane	Liz + Bev	Kate + Karen
sound	+	+	+	+	+	+	+	+	+	+	+	+	+	lost
Translog	-	-	-	-	-	-	+	+	+	+	+	+	+	+
Revision- sound	Partially lost	+	-	+	lost	+	+	+	+	+	lost	+	+	-
Revision - Translog	-	-	-	-	-	-	+	+	+	+	+	+	+	-
interview	+	+	-	+	+	+	+	+	+	+	lost	+	+	-

Table 60 A summary of subjects and types of data collected (cont.): Translation students and professionals

group	Translation students							professionals		
names	Ron	Ruth	George	Ivy	Jill + Bob	Molly + Sam	Mandy + Zoe	Lily	Tracy	Sean
sound	+	+	+	+	+	+	+	+	+	+
Translog	+	+	+	+	lost	+	+	+	+	+
revision - sound	+	+	+	+	+	+	+	+	+	+
revision - Translog	+	+	+	+	+	+	+	+	+	+
interview	+	+	+	+	+	+	+	+	+	+

4.3. The Analysis of the Results

In this chapter objective indicators of the translator's behaviour are analyzed. We start out with presenting how the three raters evaluated the translations. Then temporal aspects of the translation process are examined. In the subsequent sections we embark upon the problems of reading the ST and the translation brief and the number of run-throughs. Finally, the use of reference materials is discussed in detail. In each section, results are analyzed with respect to experience and data collection technique. In addition, we relate the findings in each factor to performance indices.

4.3.1 The quality of the translations

As already indicated above, three raters were involved in the evaluation of translations. The background of the evaluators can be explained by the following considerations: we needed professionals to evaluate performance but we were also aware that there are different types of requirements a translator faces throughout his/her career. We aimed at covering as many requirements as possible when we selected the raters. The university professor was chosen because she was supposed to represent academic requirements. The professional translator was presumed to look through the eyes of a practitioner and apply real-life criteria when revising the translations. The editor of a local paper was involved because he was assumed to be the only person who could not be affected by the English original and could have had an expert look at the Hungarian TTs. He was also the authentic person to check the completion of the translation brief.

As opposed to the quantitative survey, the raters were provided no detailed performance-level descriptors. The reason for this was that we wanted them to apply their own professional criteria when evaluating the target texts. One of the interesting questions that arose was how much these criteria and the opinion of the various experts overlap.

In applying a three-point scale (good-mediocre-poor) we followed Jääskeläinen's (1999) example. As the study did not focus on translation assessment, further differentiation and sophistication of the scale was not considered to be necessary.

Nevertheless, the journal editor evaluated the translations on a 10-point scale by mistake. On subsequent questioning he admitted to have lost the sheet describing the evaluation procedure. The use of the 10-point scale in itself does not prevent any statistical computations, but for the sake of comparability the scores of the editor were transformed into a 3-point-scale, which process he agreed to. The following pattern was used for conversion:

$$0-4 = 1$$

$$5-7 = 2$$

$$8-10 = 3$$

Jääskeläinen referred to the fact that the editor-evaluator in her study did not find any translations suitable for publication without further editing. The journalist in our study simply re-wrote the news item to sound more Hungarian. His version is attached to the dissertation, too (see Appendix 17) and forms a valuable contribution to the study as it can be used for later text-linguistic research purposes, as well.

The evaluators were provided a printed version of the translations with an identification number on it. The identification number was assigned to the translations randomly and did not express anything about the subject's experience or the data collection technique applied.

The results of translation evaluation are shown in Table 61. In the following, we first analyze agreement between the three raters. Then characteristics of the different sub-groups performance will be discussed.

4.3.1.1 Agreement between the three raters

As there were no common prescriptions for evaluation criteria, we cannot use the concept of interrater agreement or reliability in this study. However, the question, whether and to what extent independent evaluators agree on the quality of translations deserves attention. As a result, correlations between the individual raters were computed. Results are shown in Table 62.

Table 61 Translation performance evaluated by three raters

Name	Experience	Id. Number	Editor10	Editor3	Professor	Translator
Rachel	Sec. School	2	7	2	2	1
John	Sec. School	20	4	1	1	1
Greg	Sec. School	10	5	2	1	1
Meg	Sec. school	19	4	1	2	1
Pam	Eng. major	5	7	2	1	2
Joan	Eng. major	13	6	2	3	2
Susan	Eng. major	17	4	1	1	1
Tim	Eng. major	8	4	1	1	1
Alice	Eng. major	22	4	1	1	1
Ron	Tr. student	12	6	2	1	1
Ruth	Tr. student	18	5	2	3	3
George	Tr. student	3	5	2	3	3
Ivy	Tr. student	23	9	3	3	3
Sean	Expert	14	8	3	2	2
Lily	Expert	6	6	2	2	2
Tracy	expert	11	8	3	2	3
Mary-Kitty	Sec. school	1	6	2	1	1
Ebeneser-Insane	Sec. school	15	8	3	2	2
Wendy-Jane	Eng. major	24	9	3	2	1
Liz-Bev	Eng. major	9	5	2	2	2
Kate-Karen	Eng. major	7	6	2	2	3
Molly-Sam	Tr. student	16	7	2	3	2
Mandy-Zoe	Tr. student	4	7	2	3	3
Jill-Bob	Tr. student	21	-	-	3	3

Table 62 Correlations between the three evaluators. (n=23) Spearman rho. * p<0,05; ** p<0,01

	Editor10	Editor3	Professor	translator
Editor10	-	0,91**	0,41 (p= 0,051)	0,41 (p=0,050)
Editor3		-	0,44*	0,50*
Professor			-	0,76**
translator				-

The high correlation between the editor's two scales (editor10 and editor3) is an evidence that transformation did not essentially alter the results.

Significant correlations can be found between all three evaluators provided they used the three-point scale. We have to note here, that correlations between the editor's 10-point scale and the other two raters are very close to significant, too, as indicated in the tables.

As can be expected, the editor's agreement with the other two evaluators is lower than the agreement between the two translation experts. Agreement expresses to what extent the raters used the same criteria when they evaluated the TTs. As the editor could not check the English original, his criteria were, by definition, not identical with those of the experts. Taking this into account, the correlation is surprisingly high. To interpret the numbers, the moderately high correlational coefficients 0,44 and 0,50 express agreement on the quality of the *Hungarian* TT.

The relation between the university professor's and the practicing translator's ratings is both high and significant. It provides evidence that they spontaneously used more or less similar criteria when evaluating the translations.

Highlightings in Table 61 indicate cases when it was easier for the raters to reach agreement. These cases raise questions that cannot be answered here because of the small size of the sample but that should deserve investigations of their own. These questions involve whether it is easier for raters to harmonize their decisions in the case of certain sub-groups (e.g. language learners or professionals) or if it is easier to agree on what a poor translation is than on what a good translation is (or vice versa).

4.3.1.2 Translation performance in the process-oriented study: a comparison of different sub-groups

Differences between TA and PT

Table 61 above shows how translation performance differed in the various sub-groups. To get a more precise picture, further analyses were carried out, although because of the small size of the sample statistical analysis proved to be impracticable in most cases.

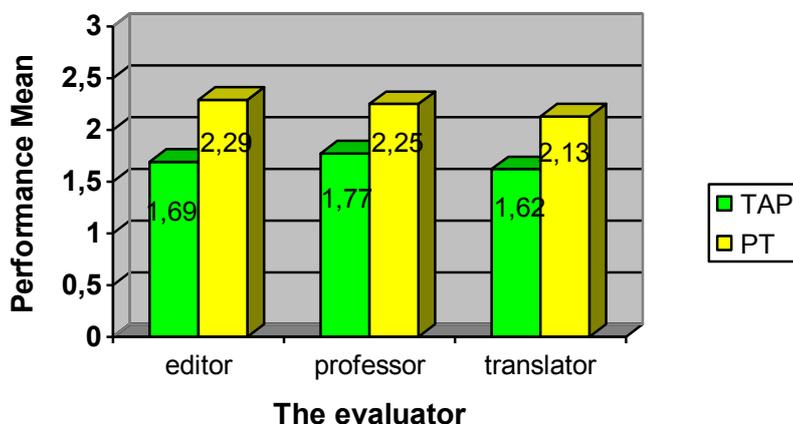
The first question that arose was whether there was a difference between the performance of the pairs and the individual translators. As no professionals took part in the pair translation project, they had to be excluded from further analysis to prevent the distortion of the data. The mean values of the performance of the two groups are shown in Table 63 and in Figure 12.

Table 63 Performance mean differences between TAP and PT subjects by evaluators. Results of the independent samples t-test.

	TAP (n=13)		PT (n=7)		F(p)	t(p)
	Mean	SD	Mean	SD		
Editor (3-point scale)	1,69	0,63	2,29	0,49	0,94 (0,35)	-2,16* (0,045)
Professor	1,77	0,93	2,25	0,71	2,83 (0,11)	-1,26 (0,23)
translator	1,62	0,87	2,13	0,83	0,32 (0,58)	-1,32 (0,20)

As can be seen, pairs consistently performed better than individuals according to each evaluator. The magnitude of the difference is also comparable among the three raters, although it is relatively low. The small difference may be due to the undifferentiated performance-scale. The difference is even significant in the case of the editor, but as said, no generalizations can be made because of the small size of the sample.

Figure 12 Performance mean differences between TAP and PT subjects by evaluator



Nevertheless, performance differences between pairs and individuals raise important questions. A central issue is the methodological question whether TAP and PT are techniques that differ only in their potential to make psychic processes transparent. If pairs consistently produce better translations than individuals, then it is *highly unlikely that the same processes are at work in both cases*. In other words, there must be something – some cognitive, affective or social processes – that account for higher performance in the case of the pairs. It must be noted here, however, that first evidence should be brought on a sufficiently large sample that pair translation leads to higher achievement than solitary work.

Further related problems that should be studied include:

- Whether the same individual would perform better in a pair than alone. Investigating this problem is not as easy as it may seem first. Obviously, the same text cannot be given to the same person twice, consequently, the problem of equivalent text selection arises again. Assigning partners to translators may lead to further complications in research, too. It is possible that working with one partner may raise performance while working with another may lead to weaker performance.
- Whether groups with different levels of experience are equally affected by the phenomenon. In our sample, the difference between individual translators and pairs was smaller in the case of translation students than in the case of language learners (see Table 64) but, again, no conclusions, can be drawn from these results. In addition, these figures seem to be highly dependent on the evaluator, too.

Table 64 Performance mean differences between TAP and PT subjects by experience level and by evaluator

	<i>editor</i>		<i>Professor</i>		<i>translator</i>	
	TAP	PT	TAP	PT	TAP	PT
<i>Secondary school students</i>	1,50 (n=4)	2,50 (n=2)	1,50 (n=4)	1,50 (n=2)	1,00 (n=4)	1,50 (n=2)
<i>English majors</i>	1,40 (n=5)	2,33 (n=3)	1,40 (n=5)	2,00(n=3)	1,40 (n=5)	2,00 (n=3)
<i>Translation students</i>	2,25 (n=4)	2,00 (n=2)	2,50 (n=4)	3,00 (n=3)	2,50 (n=4)	2,67 (n=3)
<i>Professionals</i>	2,67 (n=3)	-	2,00 (n=3)	-	2,33 (n=3)	

The question arises what helps pairs in our sample to produce better TTs than individuals. Probably, even the comprehensive analysis of the protocols would not be sufficient to account

for all the factors that might influence achievement in pairs. Nonetheless, some factors analyzed in our study may shed light on what facilitates higher achievement for pairs. For instance, as we will see, both translation time and the number of dictionary searches is lower for pairs than for individuals signalling that a possible summation of knowledge and skills is in the background of pair's performance. Nevertheless, differences in language competence may contribute to performance differences, too.

The performance of different sub-groups

Another, equally important question relating to performance concerns the differences between the sub-groups created on the basis of formal educational criteria. There was a tendency in our sample that indicated a growth of performance with experience (see Table 64 and Figure 13). In spite of the small sample size, ANOVA was significant in a number of cases (see Table 65). On the one hand, this justified the creation of the sub-groups and, on the other hand, it offered some positive reinforcement to translator training in Hungary.

Table 65 ANOVA of sub-groups' performance differences. ** p<0,01; * p<0,05

		Total sample				TAP				PT			
		Df	SS	F	p	Df	SS	F	p	Df	SS	F	p
Editor3	Between group	3	2,17	1,75	0,19	3	4,13	4,57	0,02*	2	0,26	0,45	0,67
	Within group	19	7,83			12	3,62			4	1,17		
	total	22	10,00			15	7,75			6	1,43		
professor	Between group	3	6,16	4,66	0,01*	3	3,24	1,80	0,20	2	3,00	15,00	0,008**
	Within group	20	8,80			12	7,20			5	0,50		
	total	23	14,96			15	10,44			7	3,50		
translator	Between group	3	7,54	5,53	0,006**	3	6,13	5,04	0,02*	2	1,71	1,35	0,34
	Within group	20	9,09			12	4,87			5	3,17		
	total	23	16,63			15	11,00			7	4,88		

Figure 13 Performance means scores by sub-groups and by evaluators (TAP)

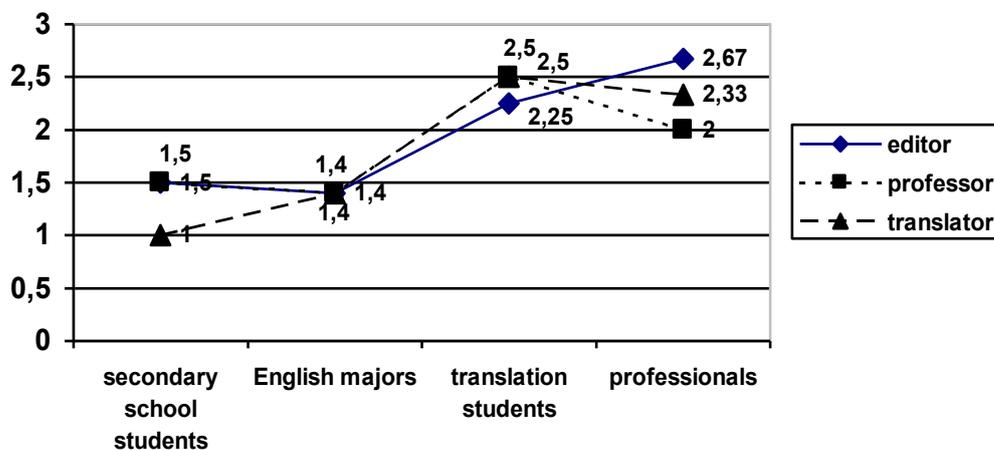


Figure 14 Performance means scores by sub-groups and by evaluators (PT)

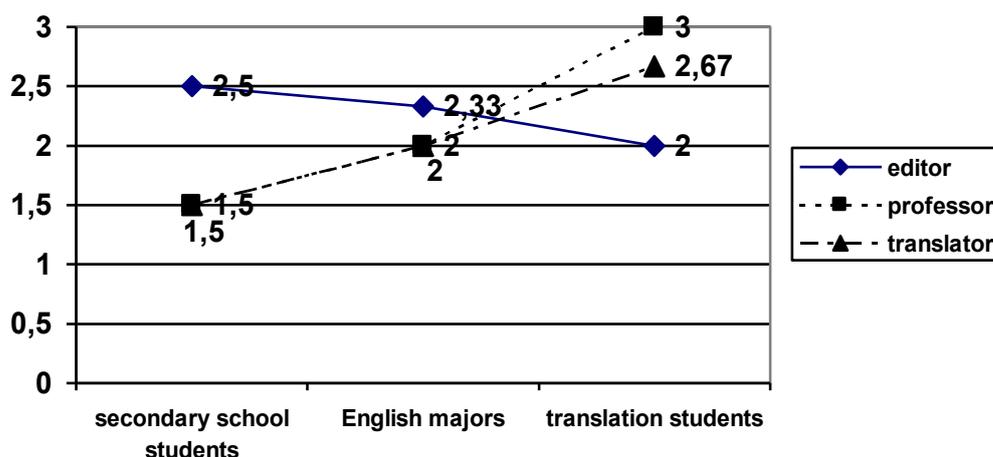
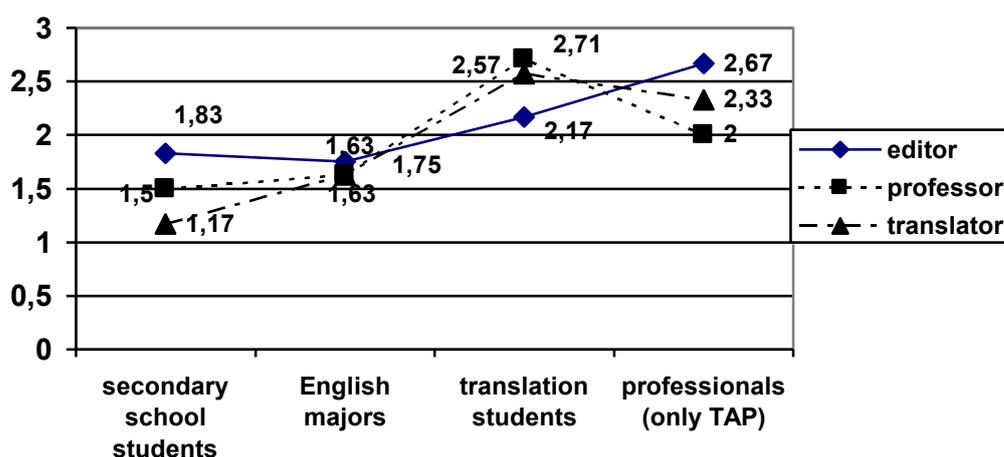


Figure 15 Performance means scores by sub-groups and by evaluators (total sample)



Although the diagrams clearly show the tendency to translate better with growing experience there are also some exceptions to it. The most striking one is the editor's evaluation of translation students' pair-work. This is the only point where he is clearly running against the judgment of the two translation experts (see Figure 14). On the basis of our data, however, it is impossible to explain this phenomenon. Detailed error-analysis could probably shed light on the causes of discrepancy between the raters. We can only hypothesize here, that probably translation students could not fulfil some of his requirements, while at the same time, he missed some grave information transfer mistakes language learners had had committed. We should not forget, however that only two to three pairs took part in the project, thus, no consequences can be drawn from these specific cases.

Professional translator's performance deserves some attention, too. First, there is a marked divergence in the evaluators' judgments concerning the quality of their work. They received the highest scores from the editor and the lowest scores from the professor. On the basis of this data we may draw the tentative conclusion that our professionals must have had distanced themselves from academic requirements and identified more closely with real-life requirements producing a TT that an editor would have expected of them. This may indicate

an excellent fulfilment of the translation brief, too. This assumption is supported by the fact that professionals were the highest achieving group according to the newspaper editor.

If we take a closer look at Table 61, we will find that the *university professor* gave the *highest scores* to her potential students: *all translation students* received a “three” whether they worked in pairs or alone, the only exception being Ron, the medical student, who took part in another program. At the same time, she rated professionals’ performance to be mediocre (2). Following the line of thought started in the previous paragraph, we may assume that translation students had conformed to the expectations of the university program and the professors. We must note, however, that the practitioner translator’s evaluation was very similar to that of the university professor: she only rated a student-pair translation lower and a professional translation higher than the professor. This is a point where we have to face the limitations of the small sample again. It is impossible to tell whether the total harmony between the professor and her students is the outcome of working in the same institution or mere coincidence.

The small size of the sample, however, enables us to observe some individual cases more closely. Ivy’s case was already discussed in detail in *Section 4.2.1* as she possessed much more experience in translation than other translation students or some professionals. Her performance was also clearly superior to the others: she was the only person to get a 3 from all evaluators. In addition, her TT was singled out by two raters to be the best of all translations. Transferring Ivy into the professional group would definitely help us make curves look more conforming to expectations, but we believe that leaving her in the student group also has some advantages. It simply reflects Hungarian reality about the world of translation. Ivy’s inclusion in the student group probably explains the slight drop of performance between translation students and professionals both in the professor’s and the expert’s scale.

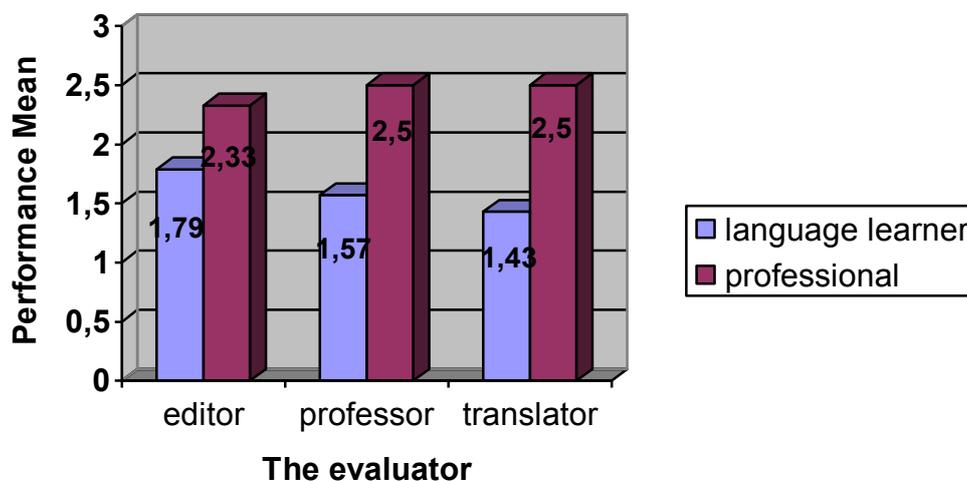
The other extreme in the translation student category is Ron, who we also mentioned in *Section 4.2.1* Ron’s performance is as poor as other language learners’ achievement (see *Table 61*). This may be due to shortcomings in his language skills and the fact that he took part in a different program than the other translation students. His presence in the group compensates for Ivy’s excellence, but draws attention to the fact, again, how diverse a seemingly homogeneous group like translation students may be.

Both the tables and the figures in this section show that there is a watershed between English majors and translation students in the TAP studies. We may hypothesize that there is a cleft between the competence and performance of language learners and (would-be) professionals. As a result, we decided to merge secondary school students and English majors in one group, on the one hand, and translation students and professionals into another group, on the other hand, and compare their performance. Results are shown in Table 66 and Figure 16.

Table 66 Performance mean differences between language learners and (would-be) professionals * p<0,05; ** p<0,01

	Language learner (n=14)		(would-be) professional (n=9)		F(p)	t(p)
	Mean	SD	Mean	SD		
Editor (3-point scale)	1,79	0,70	2,33	0,50	0,72 (0,41)	2,19* (0,04)
Professor	1,57	0,65	2,50	0,71	0,06 (0,81)	3,29** (0,004)
translator	1,43	0,65	2,50	0,71	0,15 (0,70)	3,79** (0,001)

Figure 16 Performance mean differences between language learners and (would-be) professionals by evaluator



In spite of the small sample, there is a statistically significant difference between the performance of the two groups according to all three evaluators, and the difference is relatively large: it amounts to approximately one point on a three-point scale. These findings underline the importance of translation training and experience in acquiring expertise. We must note, here, however, that (would-be) professionals' higher achievement cannot be seen as a proof for the benefits of formal training only. It is possible that people who choose to take part in translation training are the ones who are already among the bests within the group of language learners. They may also have higher language skills, be more talented in translation or more motivated and attracted to the profession. These are all background variables that can have a serious impact on performance. In consequence, the impact of training can only be calculated if these factors are controlled for.

Figure 16 also demonstrates that the perceived difference between the two groups is the smallest in the case of the editor. This must be a painfully familiar phenomenon for many practicing translators: for laypersons the difference between the quality of the language learner's and the professional translator's work is often simply invisible. We may hypothesize that 'blindness' on the part of outsiders is even larger when they are not dealing with language in their daily routines.

The clear cleft between the performance of language learners and (would-be) professionals convinced us that later analysis should be carried out along this line, as well.

4.3.2 The temporal aspects of the translation process

Temporal aspects of the translation process are important from several points of view. On the one hand, speed is an indicator of efficiency although the value of quickness depends highly on the quality of the TT produced, too.

The speed of translation can obviously be linked to automation which is generally viewed as a characteristic of expert behaviour (Sirén and Hakkarainen, 2002). Because of automation it is expected that it takes less time for more experienced translators to complete their work than for novices. However, some previous research results (Gerloff, 1988; Jääskeläinen, 1999) suggested that advanced language learners were the quickest to finish translations (see *Section 2.5.3.2.1*) as they could not recognize translation problems, and, in consequence, did not devote any time to solving them. An aim of our study was to find evidence pro or contra the assumption that translation speed grows with experience.

The temporal aspects of translation involve not only speed but the issue of the phases of translation, too. Krings (1986b) split up the translation process into three phases, which were originally labelled as ‘Vorlauf’, ‘Hauptlauf’ and ‘Nachlauf’. Jääskeläinen (1999) applied Krings’ categories in her research and introduced the English terms pre-writing, writing and post-writing for the individual phases of translation. The first stage of the translation process is the *pre-writing* phase, which starts with the first glance at the text or the translation brief and lasts until the translator starts writing or typing. This is followed by the *writing* phase, which involves drawing up the first version of the TT. *Post-writing* involves all the run-throughs that aim at editing the first version of the TT.

The question arises whether the length and the ratio of the individual phases varies with expertise and if so, how. Based on previous research on cognitive science (for a summary of findings relevant to translation studies see Sirén and Hakkarainen, 2002) we could hypothesize that experts have a longer preparation phase and a shorter execution phase. However, research on writing (Bereiter and Scardamalia, 1987) stresses the importance of the revision phase, which would suggest that the post-writing is (also) longer for experts. A further dilemma relates to how the length of the individual phases can be connected to the quality of the translations. Although both Krings (1986b) and Jääskeläinen (1999) could identify two translator-types, one who concentrates on preliminary work and one who focuses on revision, it is not clear whether these work-styles can be linked to expertise or quality work or not.

In this section, findings related to these issues will be discussed in detail.

4.3.2.1 The time needed to carry out the translation task

As already mentioned above, the translations were completed in two sessions in our study, as a result, we have two temporal indicators to analyze: the length of the main session, and the length of the revision session. The temporal indicators of the subjects’ translation processes are presented in Table 67. First, findings related to the type of data collection are presented then experience as a factor associated with the length of time needed to translate is discussed.

4.3.2.1.1 A Comparison of TA and PT data

As can be seen in Figure 17, it took *pairs 9 minutes less than individuals* to complete their translations in the main session. Professionals, again, were excluded from the sample. The difference between the two groups is not significant, which may be due to the small size of the sample.

The phenomenon that pairs in our sample needed less time to translate the text calls for further clarifications. A possible explanation concerns the TA subjects. As we have seen in Section 2.5.2.2 thinking aloud is not supposed to interact with cognitive processes but it is accepted that TA may slow down these very processes (Ericsson and Simon, 1999). It is possible that not pairs were quicker in translating but subjects thinking aloud slowed down under the cognitive load of continuous speech. This assumption could only be checked if the same text were translated under similar circumstances with a similar sample *in silence*.

Another potential explanation concentrates on the characteristics of pair translation. The composition of the sample may assist us in interpreting results, too, as language learners are overrepresented in it. Some previous studies (Krings, 1986b, Lörcher, 1991, Jääskeläinen, 1999) indicated that language learners focused on understanding the ST and devoted less energy to the formulation of the TT. It can be assumed that two translators cope with the task of comprehension more effortlessly and quickly than a solo translator, particularly if they are language learners. As a result, the reduction of the total time of translation may be due to a decrease in the time needed for understanding the ST. A comparison of TAP and PT subjects

in the three sub-groups lends some support to this assumption, as the difference between the two groups decreases with experience and finally disappears (see Table 68).

Table 67 Temporal indicators of the translation process

Name	Experience	Total 1 st session (min)	Pre-writing	Writing	Post-writing	Revision
Rachel	Sec. School	82,71	3,82	65,63	13,27	-
John	Sec. School	92,20	0,00	72,97	19,23	4,94
Greg	Sec. School	72,70	0,66	48,20	22,98	7,88
Meg	Sec. school	59,82	1,68	36,75	21,38	-
Pam	Eng. major	72,68	10,03	51,58	11,06	13,97
Joan	Eng. major	65,06	0,00	33,37	31,70	10,13
Susan	Eng. major	62,45	1,30	56,23	4,92	4,07
Tim	Eng. major	65,70	0,00	38,33	27,37	-
Alice	Eng. major	65,83	1,62	43,12	21,10	12,50
Ron	Tr. student	46,17	20,32	19,07	7,83	8,00
Ruth	Tr. student	54,27	2,58	27,52	24,13	14,13
George	Tr. student	38,85	0,00	36,53	2,02	8,62
Ivy	Tr. student	62,32	1,25	40,93	20,13	18,13
Sean	Expert	47,38	3,13	29,65	14,60	15,60
Lily	Expert	66,27	14,08	46,03	6,13	18,42
Tracy	expert	38,05	1,77	21,68	10,37	10,25
Mary-Kitty	Sec. school	53,43	0,00	43,53	9,90	5,68
Ebeneser-Insane	Sec. school	50,08	0,00	34,18	15,90	-
Wendy-Jane	Eng. major	43,88	5,92	30,65	7,32	4,73
Liz-Bev	Eng. major	64,63	8,10	31,65	24,00	14,98
Kate-Karen	Eng. major	-	-	-	-	-
Molly-Sam	Tr. student	41,63	3,97	34,70	2,98	8,48
Mandy-Zoe	Tr. student	48,06	0,00	41,35	6,57	8,47
Jill-Bob	Tr. student	80,00	0,37	39,05	40,58	20,60

Figure 17 The length of the first (main) session. A comparison between TA and PT subjects

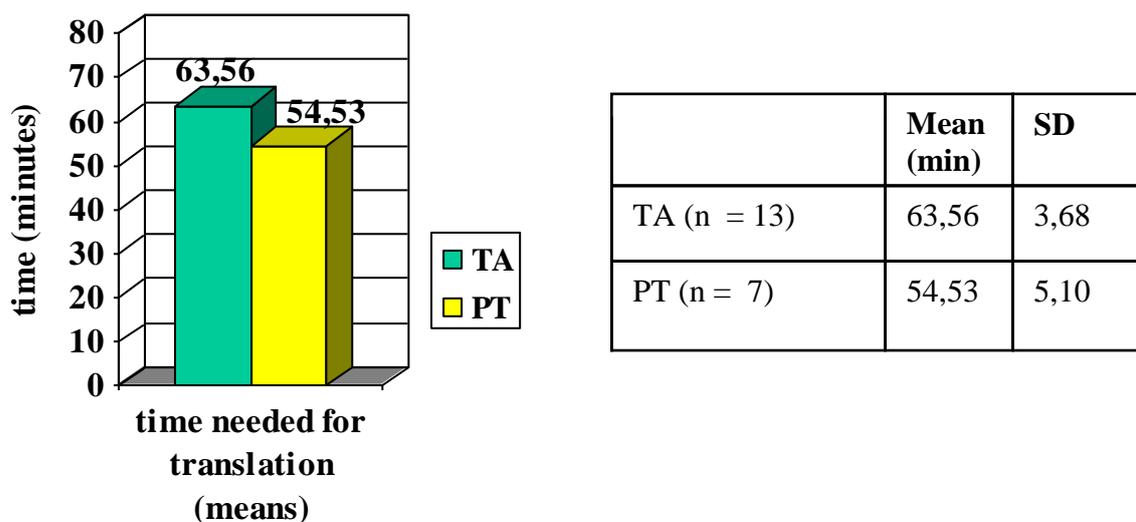


Table 68 The length of the 1st (main) session. Means and standard deviations.

	TAP (n=15)	PT (n=7)	Total sample (n=23)
Secondary school students	76,86 (13,87) (n=4)	51,76 (2,37) (n=2)	68,49 (16,87) (n=6)
English Majors	66,34 (3,80) (n=5)	54,26 (14,67) (n=3)	62,89 (8,96) (n=7)
Translation Students	50,40 (10,14) (n=4)	56,56 (20,55) (n=2)	53,04 (14,25) (n=7)
Professionals	50,57 (14,38) (n=3)	-	50,57 (14,38) (n=3)

Here we should cursory refer to some of the phenomena observed in the protocols that could have helped speeding up the translation process for pairs. They were as follows:

- The two persons vocabulary were ‘added up’, as a result, they could save dictionary searches.

„Én a lidet sem tudom.
A lid az az üvegnek a teteje.” (Liz and Bev)

- Division of labour: one of the subjects was searching the dictionary or typing while the other one was working out tentative translation versions or revising the TT etc.

„Erősen gondolkodom, nem jut eszembe.(0,57)
Oké! (0,83) tedd azt(0,46) addig visszaolvasom van e benne valami hiba.” (Molly and Sam)

- The two persons’ syntactic, semantic and textual knowledge were added up too, leading to situations where one of them could understand, what the other one could not. The following excerpt is from secondary school students’ protocol working on

the sentence: “Mueller said he taught Frida the trick after he remembered seeing octopuses showing remarkable dexterity off the coast of Morocco...” (S6)

„Müller azt mondta, hogy gondolatai sz<:>erint, vagy elképzélése szerint (0,47) Frida (2,83)
Frida the trick... (/a) (0,57)
A trükköt, (0,42) miután (0,58) emlékezett látni vagy, hm☹?
(0,46) igen, hagyjuk! (2,34)
Hol van az ige?? (0,60)
Ah. (nyög) (0,36)
Nem? (0,37)
Hát igen.
Mármint hogy Frida után(?) (/the)
[...]
dext-erity, nézd itt van! (0,68) (/dexterity) ügyesség, fürgeség.
Figyelemreméltó fürgeség. (1,07) Mhm. (3,39) de a [to:t] (1,52)
Nem! (0,48) Tudod, mi a [to:t]? Tanította, nem? (Jaa!!) (0,82) öhh
(Ebeneser and Insane)

At the same time, conflicting hypotheses about the meaning of words or sentences could have held up the progression of the work. Similarly, disagreements on the TT form led to a lingering in the process several times. It is, however, impossible to measure exactly the time won or lost by these phenomena as a result, we can only presume that gains outmeasure losses in the case of language learners.

Listening to the recordings reveals that there can be several further reasons for the lengthening or the shortening of the translation time. In the case of pairs, cooperation strategies may be a key factor in determining both the time taken to translate and the success of the translation. It took two translation students, Jill and Bob 80 minutes to translate the news item, which was the third longest session in the whole sample. The researcher has the impression that the extreme length of their work is partly due to their competitive communication style, which is reflected in the relatively large amount of parallel talk in their protocols, too. However, the study of cooperation and competition in conversation is a largely undiscovered field in Hungarian, as a result, further analysis of the issue cannot be carried out here. Nevertheless, this can be one of the most promising lines of further research growing out of the present project.

In summary, our findings indicate that the TA and the PT technique may influence the time of translation to different degrees. Translating in pairs proved to be quicker than translating alone. If, however, the time, needed to translate is dependent upon the data collection technique, it is very likely, that mental processes are influenced by the very technique(s), too. We can further hypothesize that subjects with different levels of experience are not equally affected by the presence of a partner, but because of the small size of the number further investigations are needed to prove this assumption.

4.3.2.1. Translation time as a function of expertise

It is usually assumed that experts (in any field) are not only more successful in solving problems but they are more time-efficient, too. As already mentioned in *Sections 2.5.3 and 4.3.2*, some research results contradict this hypothesis when applied to translators. Consequently, an objective of our research was to find evidence whether translation processes get faster with expertise. Our results confirmed the classical hypothesis, as the time needed to translate the ST progressively decreased as a function of experience. This was observed both for the total sample and for TAP subjects only, as well (see Table 68 and Figures 18 and 19).

PT subjects' mean translation times showed a different pattern but it was already discussed above.

Figure 18 Time needed for translation (means) by different sub-groups. Total sample.

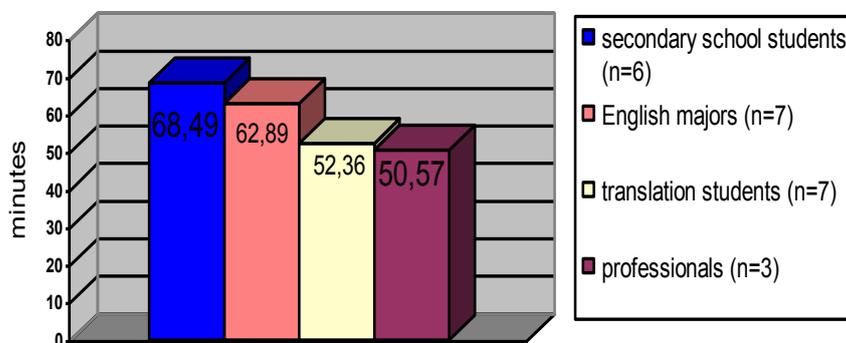
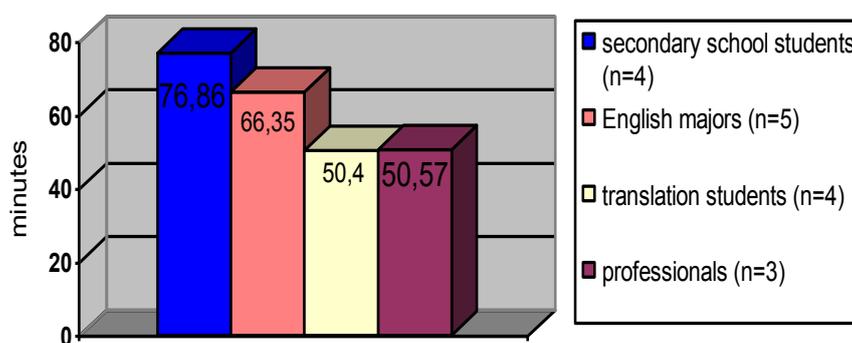


Figure 19 Time needed for translation (means) by different sub-groups. TAP subjects.



Analysis of variance (ANOVA) showed that the differences between the sub-groups were significant in the TAP sample (Table 69). Nevertheless, because of the small size of the sample, generalizations cannot be made from the results. All we can say is that probably similar results would be arrived at if we repeated the experiment with a similar sample and a similar text.

Table 69 ANOVA of sub-groups' translation time. TAP subjects

	Df	SS	F	P
Between group	3	1907,49	5,62	0,012
Within group	12	1356,62		
total	15	3264,11		

As the cleft between language learners and (would-be) professionals became visible again, differences between the two merged groups were checked once more, and we found that the mean difference of the time taken to translate the ST was significant between the two groups both for the total sample and for TA-subjects only, too (see Table 70).

Some explanations are needed to illuminate why our results run contrary to previous findings by Gerloff (1988) and Jääskeläinen (1999). The most important reason can be the fact that some background factors of the three studies differed to a great extent. These involve the characteristics of the ST (text-type and genre, its length and its difficulty), the presence or

absence of a translation brief, the studied language pairs, the quality of the reference materials and the mode of writing (hand-writing or typing). It is probable that these background factors exert a strong influence on translation time. However, *individuals with differing degrees of experience may not be equally affected by these factors.*

Table 70 Translation time mean differences between language learners and (would-be) professionals. Results of the independent samples t-test * p<0,05; ** p<0,01

	Language learner		(would-be) professional		F(p)	t(p)
	Mean (min)	SD	Mean (min)	SD		
Total sample	65,47 (n=13)	12,93	52,30 (n=10)	13,52	0,23 (0,64)	-2,36* (0,03)
TAP	71,02 (n=9)	10,49	50,47 (n=7)	10,97	0,11 (0,75)	-3,79** (0,002)

The characteristics of the *target text* may be key factors in explaining differences between various research results. In our study, subjects translated a news item, that is, a general text, whereas in Jääskeläinen's investigation the ST was a popular scientific article with a more specialized vocabulary. It is possible that the general text did not prepare any challenges for (would-be) professionals, consequently, automation was at work predominantly instead of enhanced problem-solving. This has led to the validation of classical expectations (i.e. professionals were quicker than language-learners) in our study. It is not unlikely that technical texts – like the one in Jääskeläinen's research - would encourage experts to engage in more problem-solving, which, in turn, could lead to a change in temporal patterns, particularly if experts' translation time would grow to a larger extent than that of other groups. This, however, could only be verified with a research, where the same sample would be involved in translating both a general and a specialized text.

The contradictory findings of previous studies and our study may certainly be due to the small sample sizes as well, but we propose that research conditions play an equally important role in producing dissimilar results. The effect of background factors makes clear that there is no sense in asking questions like whose translation speed is the lowest or whether translation becomes automated in general, because the answers to these questions *highly depend on the actual translation context*. There can be situations when experts are the quickest and their processes are highly automatic, whereas in other situations language learners may be the first to finish and professionals can engage in more problem-solving. There are probably several further versions of this scenario, and it should not be forgotten that, in the case of using specialized texts, a further background factor is added to the system: the expert's area of specialization. Tirkkonen-Condit and Laukkanen (1996) talk about non-routine tasks when they refer to translators working on a text-type, he or she has no experiences with. In medical research, professionals forced to operate in an area other than their own specialization are called sub-experts (Cuthbert et al., 1999). Sub-experts diagnostic processes seem to be different from those of both real experts and novices. The same could be expected of translation experts, as well.

Finally, attention should be drawn to the fact that language competence was not measured either in our or in any other TA studies. As already seen in Part 3, language competence is a major background factor related to performance that can equally influence translation time, too. Disparities in findings related to temporal aspects may be due to differences in language competence.

4.3.2.1.3 The relations between translation time and performance

Correlation coefficients were computed between total translation time and performance indices to find out whether there are any significant correlations between them. Results are presented in Table 71. (Correlation was not checked for the PT sub-sample as it was too small).

Table 71 Correlations between translation time and performance as rated by the three evaluators. Spearman rho. * p<0,05;

	Total sample			TAP		
	Editor3 (n=22)	Professor (n=23)	Translator (n=23)	Editor3 (n=16)	Professor (n=16)	Translator (n=16)
Translation time	-0,51*	-0,33	-0,31	-0,42	-0,45	-0,53*

Although there is a clear tendency that shorter translation times predict better performance, only two significant correlations were found (editor and translation time in the total sample and translator and translation time in the TAP sub-sample). Our data do not provide any background information to explain why exactly these correlations are significant. It is possible, that the results are simply an outcome of the small sample.

The fact that shorter translation time is related to a better TT in some cases can obviously be explained by the background factor of expertise. As expertise was both related to better performance and a lowered translation time, these two latter factors may show correlation, too. The finding can have economic relevance: it provides tentative evidence that employing expert translators as opposed to language learners has the advantage of getting *better translations in shorter time*.

Unfortunately, within group tendencies could not be calculated because of the small number of cases in each group. Nevertheless, it would be worth examining whether there are any correlations between the time needed for completing the task and the quality of the TT in a group of individuals with the same level of expertise.

Qualitative Analysis

Jääskeläinen (1999) suggested that reduced translation time may be a sign of superficial work and extremely long translation periods may occasionally predict better performance. This was only partially confirmed by our study: Meg, Susan and Ron seemed to be in a hurry when working and they did not succeed in the translation task. On the other hand, a professional (Tracy) took the shortest time to complete the TT, and apparently, her text did not suffer from shortcomings because of her being quick. Similarly, it is true for Ivy that the long time devoted to the translation task helped her produce a quality text, but the same line of reasoning cannot be applied for John, Pam or Lily who produced relatively weaker translations in a comparatively long time. These incidents obviously contribute to lowering the correlation coefficients as seen above.

Clear-cut connections between translation time and the quality of the TT are hard to establish because the time devoted to the translation task is dependent on several other factors. Language and translation competence are only two of these factors. Further factors that may influence translation time are:

- Time-pressure (to do something else). Although no explicit remarks can be cited here, especially some professionals and translation students often seemed to be in a hurry.
- Time-pressure (because of the characteristics of the task). The following excerpts both express the presence of a kind of a time-pressure. Joan felt that she was

forced to carry on translating even when she would have contemplated on meaning or form. Alice articulates a certain dissatisfaction regarding how long it took her to translate the text. Her statement suggests that she had requirements as to how long she was 'allowed' to translate.

„én gyorsabban fordítottam. Amúgy biztos, hogy elméláztam volna a szövegen többször. Így meg, így meg, ööö, az ember, ha, ami, a feladat. Tehát ezt nekem most, le kell ezt fordítanom, és hogy azt, és hogy azt még így mondjam, amit gondolok” (interview with Joan)

„mert egy ilyen fordítás, egy ilyen szintű, és ilyen hosszúságú fordítást nekem elvileg 45 perc alatt le kéne tudni fordítani, és talán le is tudtam volna, hogyha nem kell hangosan mondanom. Tehát csodálkoztam is, tehát ez a 60 nem tudom hány perc, vagy 60 perc fölötti ezt én soknak tartom.” (interview with Alice)

It is interesting to note here that Ruth similarly expressed a time-related self-concept when she declared in the interview that she was a slow translator. Nevertheless, Ruth did not seem to be affected by time-pressure, she proceeded at her usual rate, or at least, that is what she implied. Alice's and Ruth's comments, however, suggest the existence of a time-related expectation of one's own performance that might have a regulatory effect even when time limits are not defined.

- Being tired: may either lengthen the process or may urge the translator to finish as soon as possible.

„de hát á<:> le vagyok most eléggé fáradva.” (Ron)

„jó volna egyet aludni is. (1,21) Az ember ilyenkor álmos, ez a tavaszi fáradtság rátör az emberre.” (Ron)

- Achievement-orientation may similarly lengthen or shorten the process depending on whether the translator emphasizes time or quality of translation as an indicator of achievement.

„nem akarom elrontani ezt a fogalmazást (1,04) vagy fordítást, bocsánat.” (Meg)

Although translation time is likely to be related to performance, the educational implications of this finding are relatively scarce. The reason for this is that time seems to be a secondary factor affected by other performance-related factors. There is no use in suggesting a student to take more (or less) time to translate a text: quality depends on what he or she uses the time for. At the same time, development in translation competence is expected to be paralleled by a decrease in the time needed to translate a certain text. This may have further implications for testing.

4.3.2.2 The problem of translation phases

As already indicated above, the translation process is usually divided into three phases based on Krings (1986b). The idea of the three-phase process appeals to intuition, and it seems to be widely accepted that there is an orienting, a drafting and a revising stage in translation. We would like to argue, however, that there is an inherent problem with the three-stage model, and this problem is mostly related to the vague definition of the phases. The criteria for identifying the phases are related to creating the first *written* version of the TT, which happens in the writing phase. Pre-writing is the preparatory period before writing and post-writing is the stage where revision occurs. Although criteria are related to the act of writing

they are supposed to express *functional boundaries* between more complex translation processes. This view is more or less explicitly expressed in the description of the phases: no translation in writing is supposed to occur either in the preparatory or in the post-writing stage. The pre-writing stage is intended to be for reading the ST, understanding it, forming an overall picture of the TT, predicting translation problems, doing preliminary searches etc. Post-writing involves refining the first version produced in the writing stage. This functional distinction is important because it is often hypothesized (Sirén and Hakkarainen, 2002) that experts' more sophisticated processes involve more preparation and/or revision than layperson's processes. As Jääskeläinen (1999) put it, translation stages express *how* the subjects use the time, and this 'how' may offer as much information on expertise as the amount of time used itself.

However, when we tried to measure the length of the individual phases we came across problems that were not indicated by previous research. The criteria proposed by Krings (1986b) proved to be inadequate for identifying stage boundaries. We encountered problems both at the borderline of pre-writing and writing, and writing and post-writing.

At the *boundary of writing and pre-writing* a *general problem* relating to the strictly defined 'objective' criterion "start writing" occurred. It is highly idiosyncratic when the translator decides to put down the first letter or the first word. In most cases, the protocols include a phrase or a sentence that signals the start of the actual "writing" phase: e.g. "Nna kezdjük!" (Ruth) or "Jó. Na akkor," (Ivy) or "akkor () kezdhetjük, szerintem az elejéről" (Rachel) etc. These phrases can be followed by longer or shorter think-aloud periods when the subjects work mentally on the segment they intend to write down. If we strictly apply Krings's objective criterion (start-writing), the mental solution of the first sentence will be included in the pre-writing stage in many cases. This raises several problems:

- The mental working phase of the other sentences is included in the writing phase and *not* in the pre-writing phase.
- Functionally, this is not orientation but a step in actualizing translation (writing)
- Mental work preceding writing may be highly dependent on language and translation competence. The longer it takes a subject to formulate the written version mentally, the longer his/her pre-writing stage will be, which is a clear distortion of reality.

It should also be noted that the emergence of the computer may have contributed to invalidating Krings's criterion. The opportunity to easily restructure sentences and drag and drop phrases tempts many translators to start typing as soon as possible. It cannot be ruled out that certain aspects of translator behaviour have changed because of technical development since 1986.

In addition, certain characteristics of the text may influence when subjects start writing. In the ST of our study the source of the news item was given at the beginning of the text. Many translators began either the whole translation process or the writing phase with taking down "München, Németország, Reuters". The reason for this is that the translation of this segment could be solved relatively easily with word-for-word translation and transposing. Some subjects, however, skipped these words and started to work immediately on the first sentence. In these cases, the source of the report was translated in writing together with the first sentence or it was delayed until the end of the writing phase or the beginning of the post-writing phase. Protocols do not give sufficient information on what the reasons for this delay were, but it is clear that those who postponed writing down the source of the news item had an artificially lengthened pre-writing phase because creating a tentative TL version of the first sentence took simply longer than automatically transposing some proper names into Hungarian.

As a result of these problems, we would suggest that verbal indicators (“Na, kezdjük!” “Ok, so.” Etc.) in the protocols are more valid markers of stage boundaries than the objective criterion of “start writing”. All the protocols that included a pre-writing stage contained such an expression, too. Similarly, phrases indicating the end of the writing phase or the beginning of the post-writing phase can be distinguished too (e.g. “Akkor nézzük át megint az egészet!” /Pam/, “és azt hiszem, kész vagyok” /Susan/, etc.) The problem with this method is that we cannot list all the linguistic items that could serve as an indicator for starting or ending the actual translation phase. Consequently, the method is more subjective than simply measuring the time when subjects start to write, but this could be compensated for with employing two reviewers to determine the boundaries.

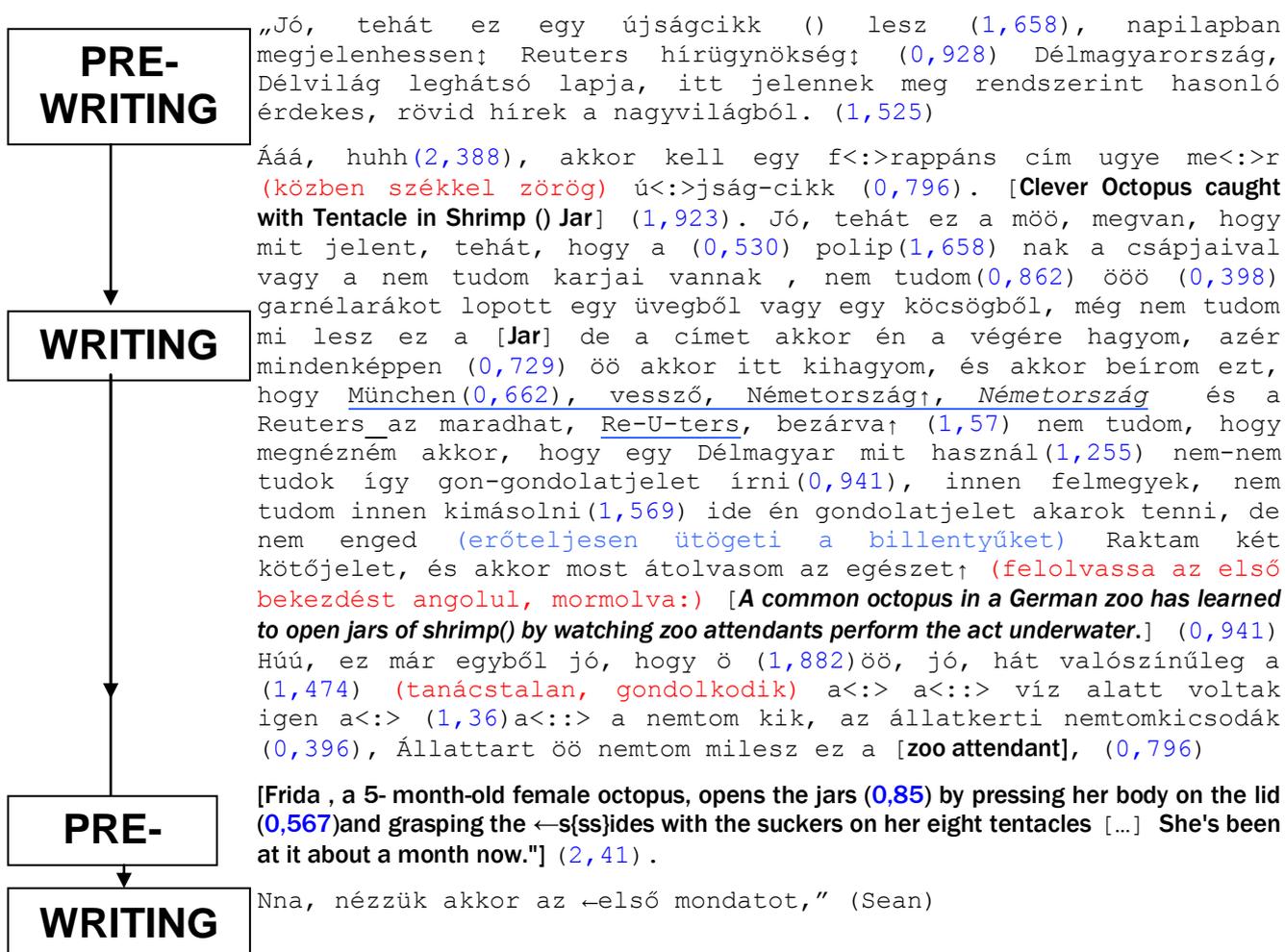
Nevertheless, even if we correct phase lengths by the method described above, we face certain problems at the boundaries of writing and pre-writing. These problems are, however, more specific than the ones described above.

Krings (1986b) already observed that there are translators who produce the first *oral* version of the TT, or at least part of it, in the pre-writing stage. The finding was confirmed by Jääskeläinen (1999). In our study, we came across 3 individuals (TA subjects: Pam, Ron and Lily) and two pairs (Liz and Bev; Wendy and Jane) who used a similar strategy. These cases are characterized by dictionary use in the pre-writing phase, too, although it may not be very intensive. In spite of the similarities, the protocols in this category show certain differences, too. Lily and Ron produce nearly complete oral versions of the TT, whereas Pam and the two pairs translate only certain segments, presumably problematic ones. At the end of the first phase, Ron declares that now, he understands the text, which implies that his aim was comprehension. Such explicit declarations are missing on the part of the other subjects, as a result, we do not know their objective in the first phase.

Irrespective of what the translators’ aims might have been, a problem relating to the TL formulation of text segments arises. As Krings (1986b) himself admits, in these cases some problem-solving activity occurs in the first phase, the function of which is supposed to be orientation and data collection. Even if Ron declared that his aim was comprehension, the fact that he formulated sentences in Hungarian means that part of the activity other subjects carried out in the writing phase was transferred into the pre-writing stage in his case. Here, again, we face a certain mixing of functions and phases, that is, a function (production) appears in a stage where another function would be expected (preparation).

The problem is even more apparent in the case of Sean. After a short reflection on the translation brief, Sean starts to struggle with the title. He soon gives up, and starts typing “München” etc. Then he proceeds to the first sentence, reads it in English, makes a faint attempt at translating it, then, eventually decides to read the whole ST. Only after having finished reading the ST, articulates Sean the key sentence indicating the start of the writing phase: “N<:>na, nézzük akkor az ←első mondatot,”.

Sean seems to be in a hurry, and wants to dive into the writing phase at once, but after two unsuccessful attempts at translating he returns to the pre-writing stage. The following excerpt from his protocol illustrates this point:



First we should refer to the fact that Sean’s protocol clearly exemplifies the inadequacy of the “starts writing”-criterion, because he started writing before reading the ST.

More importantly, we can observe a certain circularity in Sean’s protocol, a back-and-forth motion between stages and functions. Circularity is not an unknown concept for translation process research either but the spiralling process is usually meant to cover the phenomenon that translators return to the same sentence or phrase several times. We would like to suggest here that circularity involves a constant alteration of the processes of gathering information, coming up with a solution and checking this solution. This is implied by Gile’s (1995) model for written translation, too. As a result, rigid stage boundaries provide no reliable information on the functional aspect of the translation process. Because of the circularity described here, functions more often than not, transgress phase boundaries causing confusion and resulting in distorted numbers indicating phase lengths.

Problems at the borderline of *writing and post-writing* support our approach to the circularity of functions. On the one hand, there is Rachel, who sometimes re-reads and evaluates the portion of the TT that she has already written down. This is obviously a certain revision within the writing phase, although it certainly has a framing function for Rachel, governing the translation of the subsequent segments.

The opposite phenomenon can be detected in the 9 cases⁹ where the title, and in two further cases¹⁰ where the title and the last paragraph were translated in the revision phase. In these

⁹ Jill and Bob, Liz and Bev, Wendy and Jane, Mary and Kitty, Sean, Ron, Pam, Rachel, John

cases, writing occurs when revision should take place. Checking for untranslated text segments is a task that should be performed in the post-writing stage. However, the length of the post-writing period can be artificially stretched out by actual writing. As a result, the length of the post-writing stage cannot be interpreted unanimously again: a long post-writing stage may equally refer to meticulous revision (as in the case of Ivy or Jill and Bob) or to translating forgotten sentences (as in the case of Tim and Joan).

In summary, while trying to define phase boundaries we found that no matter how appealing the idea of functional translation phases is, it is very difficult to validate them empirically. On the one hand, the criterion of writing in separating phases proved to be unreliable. The reason behind this may be that previous studies must have assumed that starting (or finishing) writing signals a functional turning point in the translation process. We have, however, no evidence that writing expresses more than simple writing. In other words, more complex translation processes may occur before, after and during writing as well.

On the other hand, even after having re-defined stage boundaries on the basis of verbal indicators available in the protocols, we found a certain intermingling of the phases or at least, of the functions related to the phases. Of the 23 translations, there were 6 cases where mixing occurred at the borderline of pre-writing and writing and 11 cases where the same phenomenon was observed between writing and post-writing.

Our research suggests that the notion of translation phases in its present form has not much practical value, although we cannot deny the fact that they can be clearly identified on the basis of verbal indicators. This idea may sound somewhat heretical, particularly for those active in translation teaching, as translation didactics often involves suggestion on what should be done in the pre- or the post-writing stages. Our results imply that there are certain sub-tasks in the translation process that must be carried out, but it is by and large irrelevant, *in which phase* it is done. Jääskeläinen (1999) arrived at similar conclusions when evaluating her results. We should note, however, that an optimal *sequence* of carrying out sub-tasks may exist, our research does not give any information on this topic.

Finally, the question arises whether the concept of translation phases should be kept or abandoned. We would suggest keeping the idea of translation phases provisionally, identifying them on the basis of verbal indicators but re-defining them in a way that each and every phase contains all three functions and one of these functions is dominant in the actual phase. In the following sections, we will try to find connections between the length of the individual phases and some other factors. Although findings described in this section imply that meaningful associations with background factors are probably scarce, any such relations would assist us in defining phases and their functions in more detail.

4.3.2.2.1 The length of the individual phases

Comparing TAP and PT subjects

Individual data on phase length can be found in Table 67 above. Table 72 shows mean values of phase length by groups created on the basis of the type of data collection. As can be seen, differences are small and they are non-significant. As a result, nothing certain can be said about the two data collection techniques in this respect. Nevertheless, the relative amount of the phases may be an issue that deserves attention in further research. The writing phase is longer in the case of pairs than in the case of individuals. However, the researcher has the impression on the basis of the protocols that the presence of another person was disturbing for the pairs in the pre- and the post-writing stage, which resulted in a shortening of these stages.

¹⁰ Joan, Tim

The analysis of the number of run-throughs below may provide information on this issue, but without an investigation on a larger sample, no conclusions can be drawn on the differences between the two techniques.

Table 72 The length of the individual phases of translation. Mean differences between TAP and PT subjects. Results of the independent-samples t-test.

	TAP (n=13)		PT (n=7)		F(p)	t(p)
	Mean	SD	Mean	SD		
Pre-writing (min)	3,33	5,77	2,62	3,38	0,25 (0,63)	0,34 (0,74)
Writing (min)	43,95	14,98	36,59	4,82	4,92 (0,04)	1,25 (0,23)
Post-writing (min)	17,47	8,95	15,32	13,14	0,81 (0,38)	0,39 (0,71)
Pre-writing (%)	5,96	12,02	5,14	6,39	0,13 (0,72)	0,20 (0,85)
Writing (%)	67,39	15,55	69,77	15,36	0,00 (0,99)	-0,33 (0,75)
Post-writing (%)	26,82	14,09	25,09	15,34	0,03 (0,86)	0,25 (0,81)

Phase length and expertise

Mean values of absolute and relative phase length for groups based on experience are shown in Table 73 for the total sample and the TAP sub-sample. Analysis of variance showed no significant correlations, as a result, we cannot rule out the possibility of statistical error.

Table 73 Mean values of phase lengths by groups based on experience. The ratio of each phase relative to the total translation time is shown in parentheses.

min	Total sample (n=23)			TAP (n=16)			PT (n=7)		
	Pre-writing	Writing	Post-writing	Pre-writing	Writing	Post-writing	Pre-writing	Writing	Post-writing
Secondary school students	1,03 (1,39%)	50,35 (72,86%)	17,11 (25,75%)	1,54 (2,08%)	56,10 (71,85%)	19,22 (26,06%)	0,00 (0%)	38,86 (74,86%)	12,90 (25,14%)
English majors	3,85 (6,34%)	40,83 (65,19%)	18,21 (28,48%)	2,59 (3,67%)	44,52 (67,22%)	19,23 (29,10%)	7,01 (13,01%)	31,59 (60,09%)	15,66 (26,91%)
Translation students	4,07 (8,68%)	34,23 (67,28%)	14,89 (24,35%)	6,04 (12,69%)	31,09 (63,12%)	13,53 (24,73%)	1,45 (3,33%)	38,41 (72,83%)	16,71 (23,85%)
Professionals	5,35 (9,36%)	33,37 (64,39%)	10,37 (22,44%)	5,35 (9,36%)	33,37 (64,39%)	10,37 (22,44%)	-	-	-
Total	3,38 (6,15%)	40,33 (67,72%)	15,89 (25,72%)	3,71 (6,60%)	41,97 (66,83)	16,14 (26%)	2,62 (5,15%)	36,59 (69,77%)	15,32 (25,09%)

Even the *qualitative analysis* of the data is disappointing, as no meaningful patterns can be discovered. The only exception is the writing phase, which will be discussed below. Our statement that data on translation phases do not provide meaningful information in our study deserves further explanation as a first glance on the data may contradict this thesis. It looks as if pre-writing stage would expand with experience and the opposite tendency can be detected in the post-writing stage. The small size of the sample has the advantage that we can analyze individual cases and might find explanations for some phenomena. The expansion of the pre-writing stage in the case of translation students and professionals is largely due to Ron's and Lily's oral translation attempts in this phase. It is by no means a general tendency among more experienced subjects to spend more time on pre-writing. We should also note that Ron and Lily are the least experienced subjects in their own groups, as a result, their use of time cannot be seen as representative of other subjects in the same group. Among the English majors, Pam also had an extended pre-writing stage, but Pam's stage was much shorter than that of Ron and Lily. In addition, Pam's sub-sample consisted of 5 subjects (7 together with pairs), while there were 4 (6 with pairs) translation students and only 3 professionals in the

study. Consequently, Ron’s and Lily’s data caused a more considerable change in the mean values of the group than those of Pam.

It may be somewhat surprising that language learners (secondary school students and English majors) spent the most time both in absolute and in relative numbers on revising their texts in the post-writing stage. We would suggest, however, that this is not due to an increased awareness and carefulness concerning revision, but to shortcomings in language and translation competence and a lack of automation. Definite answers can only be given after a thorough qualitative analysis of the content of the protocols.

Both the absolute length and the proportion of the writing phase show a regular decrease with experience. The only exceptions are TAP professionals where the tendency turns back. Correlations were computed to check whether there is a significant relationship between experience and phase length. As can be seen in Table 74, significant correlations were found only between the length of the writing phase and experience in terms of absolute numbers. Relative numbers did not show any significant correlations.

Table 74 Correlations between expertise and absolute phase lengths. Spearman rho. * p<0,05;

	Total sample (n=23)			TAP (n=16)		
	Pre-writing	Writing	Post-writing	Pre-writing	Writing	Post-writing
Expertise	-0,33	-0,46*	-0,28	0,37	-0,60*	-0,40

As most of the total translation time was spent on writing, and as we have seen in *Section 4.3.2.1*, translation time was significantly related to experience, it cannot be ruled out that correlation between the length of the writing phase and expertise is a mere statistical artefact. If so, it expresses nothing more than what we have already revealed in *Section 4.3.2.1*, that is, language deficiencies and less experience in translation result in increased translation time. The phase mostly affected by this increase is the writing phase.

A lack of regular patterns in data related to translation phases was observed by Krings (1986b), and Jääskeläinen (1999), too. These research results together with our findings presented in this section support our view that mixing translation functions is so common in the phases that their artificial separation has not much practical value. Nevertheless, conclusions can only be drawn only after phases were observed in a larger sample.

Phase length and translation performance

Neither ANOVA nor correlation analysis of phase length and translation performance brought significant results. The only exception was the relationship between the editor’s rating and the absolute length of the writing phase. In this case, Spearman rho was $-0,50$ ($p<0,05$), indicating a tendency that *the better the performance the shorter the writing phase*. This finding can be explained with the background factor “expertise”, again. As translation performance grew and the writing phase decreased with expertise, we can witness a reduction in the length of the writing phase as a function of increased performance.

The lack of significant findings can certainly be the consequence of the small sample, too.

Qualitative Analysis

Qualitative analysis shows a similarly indefinite picture. We selected the five highest achieving translators, that is, those, who received at least two threes from the evaluators (Ruth, George, Ivy, Tracy and Mandy and Zoe and Jill and Bob) and tried to find a pattern in their behaviour. The only regularity we could observe was that they were never engaged in a

prolonged pre-writing stage (see Table 67). The rest of their temporal strategies showed an immense variability:

- There was a pair (Mandy and Zoe) and an individual (George) with *extremely short pre- and post writing* stages
- There were Jill and Bob and Ruth, who spent *approximately the same time* on revising as on writing.
- Finally there were Tracy and Ivy, whose *post-writing* period was *about half* of their *writing* period.

To compare high achievers' phases with weaker translators, we formed a group of those whose translation was unanimously rated poor (1) by the three evaluators. Again, we found no one with an extended pre-writing phase, and the overall behaviour patterns observed were very similar to those described above:

- Susan belonged to the group with very *short pre-and post-writing phases*.
- Alice's and Ivy's phase lengths are amazingly similar both in absolute and in relative terms (*post-writing about half of writing*), and Tim's and John's post-writing stages are relatively extensive too, although they never reach the length of the writing period.

The striking similarity between Alice's and Ivy's use of time proves that it is not the division of time that makes the difference between the best and the worst translation. There must be other significant factors determining performance and, as proposed in *Section 4.3.2.2*, the length of the individual phases is not a reliable indicator of any of these factors.

It is interesting to see that the prolonged pre-writing stages resulted in mediocre translations. As already discussed above, it was the oral production of the TT or parts of it that resulted in an extension of the pre-writing stage. Krings (1986b) referred to it as an "Entlastungsstrategie", that is a relieve-strategy that pushes the load of comprehension from the writing into the pre-writing stage. We would suggest, however, that comprehension is automatic for expert or high-achieving translators (provided they engage in reading the ST) in the first stage and even if it is not a deep understanding of the ST, it is enough for creating the scenes and frames for subsequent work. Some translators, however, may more or less fail to form a global picture of the task and the text. If they realize this problem they may start to look for information that helps them form frames for their work. Oral translation may be one of these compensating strategies. Mediocre performance by translators belonging to this group may be explained by the fact that they obviously have certain deficits – hence the use of compensating strategies. On the other hand, they must have a certain awareness relating to translation that helps them realize problems. We should highlight the fact that it is not the oral translation strategy that affects the performance of translators according to our hypothesis but it can be a sign of an intermediate stage in the development of translation competence, which can be linked with moderate performance.

Our conclusion concerning performance and translation phases is very similar to that of Jääskeläinen (1999), who argued that several different patterns of use of time may lead to superior performance, and they often contradict common sense wisdom utilized in translation courses. In the same vein, our results suggest that it is no use recommending the extension of either phase in translation because they are not very likely to contribute to enhanced performance. Nevertheless, further research is needed to verify these assumptions.

4.3.2.3 The length of the second session (revising)

As already mentioned in *Section 4.2.2* a session for revising was arranged for each subject. It is a commonly held belief that distancing oneself from one's own text, or "forgetting" the text

then re-reading it may assist the translator (or the text-producer) to detect TT errors that went unnoticed in the post-writing phase of translation. This time, we hypothesized that more experienced translators would spend more time on revision as this occasion would serve purely the aim of revising, which was not believed to be the part of the language learner's idea of translation.

First, we will address the problem of the difference between the data collection techniques, and then groups with different degrees of experience will be compared. Finally, we will examine whether translation performance has any connections to the length of the revision session.

Interestingly, TAP and PT subjects *did not differ* as to how much time they devoted to revising their TTs (see Table 75). This finding suggests that revision time is not affected by the method used for data collection.

Table 75 Mean lengths of the revising session (absolute and relative) by data collection method

	Length of revising session (min)	Length of revision relative to main session
TAP (n=10)	10,24	26%
PT (n=6)	10,49	25,09%

In contrast, *experience* appears to be a factor affecting revision time. Table 76 and Figures 20 and 21 show the absolute time spent on revision and its ratio to the main session. We must note that differences are significant for the relative amount of revision as compared to total translation time, but not for the absolute length of revision. Results of the Analysis of Variance are presented in Table 77.

Table 76 Mean lengths of the revising session (absolute and relative) by groups based on experience.

	Total sample (n=19)		TAP (n=13)		PT (n=7)	
	min	%	min	%	min	%
Secondary school students	6,17	8,94	6,41	8,10	5,68	10,63
English majors	10,06	15,70	10,17	15,07	9,86	16,98
Translation students	12,35	22,63	12,22	23,66	12,52	21,25
Professionals	14,76	29,22	14,76	29,22	-	-

Table 77 ANOVA of sub-groups' relative length of revision. TAP subjects

	Total sample (n=19)				TAP (n=13)			
	Df	SS	F	p	Df	SS	F	p
Between group	3	771,86	11,04	0,000	3	688,85	9,42	0,004
Within group	15	349,53			9	219,40		
total	18	1121,38			12	908,24		

These findings confirm our hypothesis that with growing professionalism there is a tendency to devote more time to refining the TT after a certain amount of time has elapsed since the completion of the translation task. This holds true for the relative length of the revising session as compared to the total amount of translation time. The steeper lines in Figure 21 indicate that the difference between the groups in the relative weight of the revision session is even larger than in the absolute lengths.

When analyzing our results we should address at least two questions. The first one concerns the issue of the differences between the post-writing stage and the revising session. Theoretically, both periods are assumed to serve the purpose of editing and re-writing. As we have seen in the previous section, however, the length of the post-writing stage was not systematically related to experience, whereas the length of the revising session was. This finding reinforces our belief that there is a considerable mixing of functions in the post-writing phase, consequently, results relating to the two periods diverge. Our findings may serve as a provisional evidence for the initial assumption that a delayed session is more likely to set in motion revision strategies. This can have research methodological importance.

Figure 20 The mean length of the revising session by groups formed on the basis of experience. Absolute values

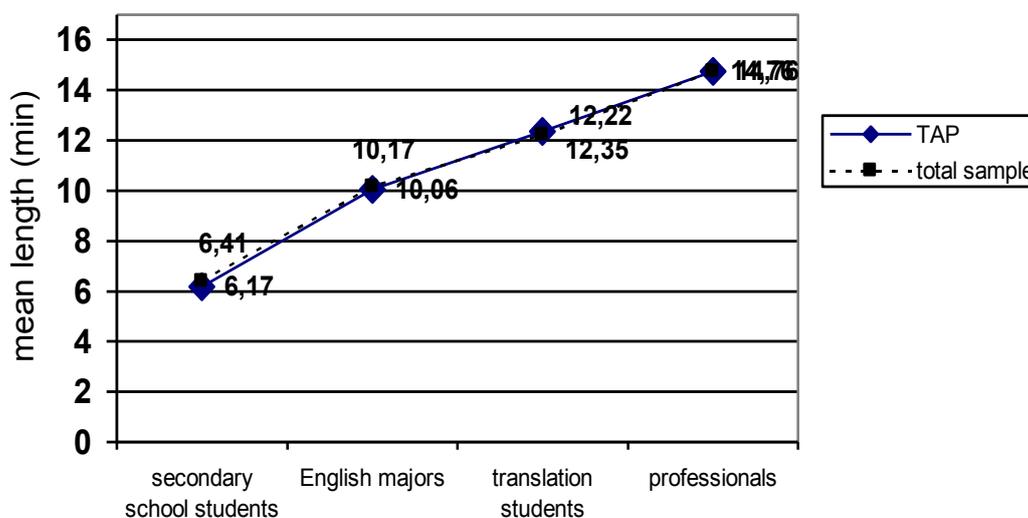
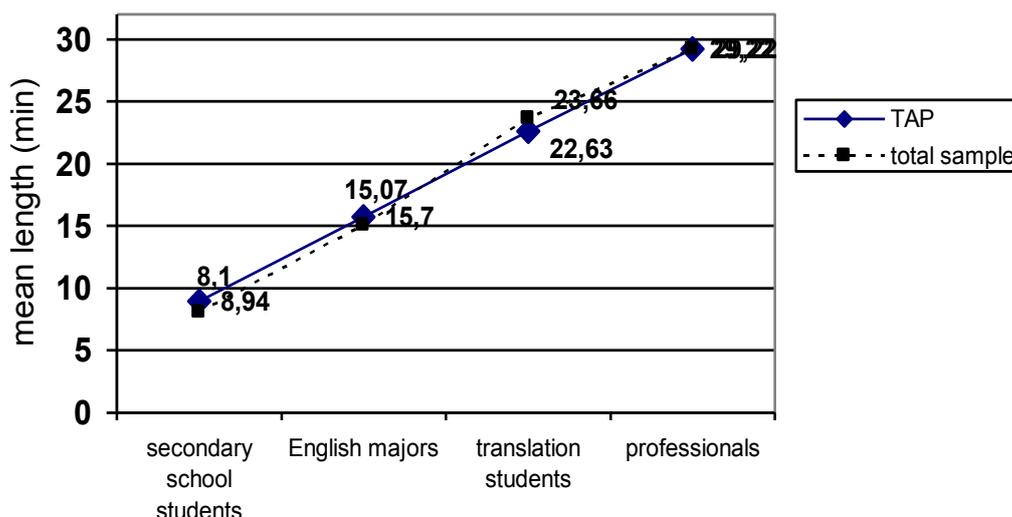


Figure 21 The mean length of the revising session by groups formed on the basis of experience. Relative values



The second question concerns why more experienced translators spend more time on revising their TTs. Two hypothesis can be made here that should be checked by a deep analysis of the revision-protocols. On the one hand, it is possible that language learners are not aware of the

importance of revising hence they have no inner motivation to improve the text or just do not know what to do in this session.

The other potential explanation is that less experienced subjects also tried to perfect their TTs but because of shortcomings in language or translation competence they failed. In particular, they must have failed in *recognizing* mistakes as shorter revision time suggests that they must have spent less time on actual problem-solving.

Not only the analysis of protocols but that of Translog data may contribute to clarifying these questions.

The results of the correlation analysis are in harmony with what was said above. In spite of the small sample size, both the absolute and the relative length of the revising session shows significant, moderate to strong correlations with expertise (see Table 78). Correlation was not significant in the PT sample, which may be attributed to the small sample size.

Table 78 Correlations between expertise and the absolute and relative length of the revision session. Spearman rho. ** p<0,01; * p<0,05;

	Total sample (n=19)		TAP (n=13)	
	Absolute length	Relative length	Absolute length	Relative length
Expertise	0,59**	0,82**	0,65*	0,86**

Performance and the length of revising

Correlations between performance and the length of the revision session are shown in Table 79. Again, despite the low number of subjects, most correlations are significant and range from moderate to strong implying a relationship between the time devoted to revision and the final quality of the TT. Nevertheless, as experience was significantly related to both performance and the length of the revision period, it is highly probable that not revision time per se is responsible for the increased quality of translations but expertise as a background factor. To test this hypothesis an investigation with a much larger sample should be carried out, so that within group differences could be studied.

No significant correlations were found in the PT sample, which can be explained, again, by the small sample size.

Table 79 Correlations between performance and the absolute and relative length of the revision session. Spearman rho. ** p<0,01; * p<0,05;

	Total sample (n=18)		TAP (n=13)	
	Absolute length	Relative length	Absolute length	Relative length
Editor3	0,35	0,56*	0,58*	0,79**
Professor	0,45	0,53*	0,50	0,58*
translator	0,64**	0,73**	0,59*	0,73**

Educational implications of these findings are not clear. On the one hand, it seems obvious that language learners and novice translators and translation students should be made aware of the importance of revising the TT after a certain time has passed since its completion. On the other hand, as we lack evidence whether more time devoted to revising itself increases performance, it is not certain that such a strategy would be helpful for novices if they do not know what to do in that phase or if they cannot handle the problems they recognize.

4.3.3 Reading the source text and the translation brief

Reading the source text prior to beginning the actual ‘transfer’ between the two languages is a controversial issue. On the one hand, there is a rule of thumb that the ST should be read, or at least, scanned to get an overall view of the task and to be able to form a vision of the prospective TT. On the other hand, several authors (Krings, 1986b; Gile, 1995; Risku, 1998; Jääskeläinen, 1999) imply that translators, whether experts or novices do not always do so, and it is not necessarily needed either.

Although the translation brief is one of the most popular notions in translation didactics these days, there is hardly any research that would have aimed at revealing how giving a translation brief actually effects process or product. As a result, we decided to examine whether and how the translation brief influences the translation process. It is often presumed that laypersons and language learners translate “into the blue”, without any special purpose in mind. Consequently, we hypothesized that reading the translation brief should be dependent on experience. An easy way to quantify whether subjects pay any attention to the translation brief is observing whether they read the translation brief or not. Analysing comments on the translation brief throughout the process is a more problematic issue, which we cannot touch upon here. We are aware that the mere fact of reading the ST does not guarantee conforming to it. Nevertheless, it expresses a certain attitude to the translation task. The following two excerpts from a secondary school student’s and a translation student’s protocol highlight the differences between their approaches to translation.

„Fordítási feladat” Ezt (0,53) szerintem nem kell felolvasni, úgyhogy félreteszem. Ez a „Fordítsa le a mellékelt szöveget...” (Rachel – secondary school student)“

„Akkor nézzük! Kaptam egy cikket a (0,14) Reuters () hírügynökségnek a (0,70) anyagából, amit most le kell fordítanom (0,76) vagy vissza kellene adni, hogy a Reuterstől jön biztosan. (0,83)aha(0,46)meg az időpont is valószínűleg fontos, meg az hogy, Délmagyar. Meg hogy milyen (0,48) egyáltalán milyen fajtájú ez a cikk, mer’ azt látom, hogy így (0,71) így-gy (1,55) ilyen érdekes hír lesz minden bizonnyal.(0,67)“ (Ron – translation student)

Both reading the ST and the translation brief was quantified in a way that those who read the text or the translation brief scored 1 point and those who did not scored 0.

In the following sections associations between preliminary reading, data collection methods, expertise and performance are discussed.

4.3.3.1 Reading the ST/translation brief as a function of data collection methods

No significant differences were found between TAP and PT subjects regarding reading the ST or the translation brief (Table 80).

Nevertheless, it is possible that pairs felt uneasy when they had to *read* lengthy passages. This could be observed both in the pre- and the post-writing phase. Hesitations (e.g. Liz and Bev, Molly and Sam) and embarrassed laughs (Molly and Sam, Wendy and Jane) were the signs of this reluctance even in the case of pairs who eventually read the ST. Reading is, by definition, a solitary activity, perhaps even more so than writing, as a result, a situation where public reading must occur may be bewildering for adults who are not used to it. It is also interesting

to observe that some pairs read the text individually in silence (Molly and Sam) while others read aloud, usually by taking turns and interpreting (if not translating) what had been read before (Liz and Bev). Joint reading may have served the purpose of preparing a common ground for translation both by guaranteeing that the partners have the same understanding of the text and by creating a cooperation method.

In conclusion, reading the source text and the translation brief do not seem to be essentially effected by the two data collection methods studied here. Nonetheless, some qualitative observations suggest that reading as a social activity differs from reading as a solitary activity, which might have an influence on pairs' attitude to reading the ST or the translation brief.

Table 80 The number and ratio of subjects who read the TT or the translation brief prior to translation. Groups based on data collection method.

	N	Read ST	Read T brief
TAP	13	8 (62%)	5 (38%)
PT	7	3 (43%)	4 (57%)

4.3.3.2 Reading the ST/translation brief as a function of experience

As can be seen in Table 81, the more experienced a subject was in our sample, the higher the chances were that he/she would read the ST and the translation brief. Nevertheless, ANOVA showed no significant differences between the groups, which can be attributed to the small sample size.

Table 81 The number and ratio of subjects who read the TT or the translation brief prior to translation. Groups formed on the basis of experience

	experience	N	Read ST	Read T brief
TAP (n = 16)	Secondary school students	4	2 (50%)	1 (25%)
	English majors	5	3 (60%)	1 (20%)
	Translation students	4	3 (75%)	3 (75%)
	Professionals	3	3 (100%)	3 (100%)
PT (n=7)	Secondary school students	2	0 (0%)	1 (50%)
	English majors	2	2 (100)	1 (50%)
	Translation students	3	1 (33%)	2 (67%)
Total sample (n=23)	Secondary school students	6	2 (33%)	2 (33%)
	English majors	7	5 (71%)	2 (29%)
	Translation students	7	4 (57%)	5 (71%)
	Professionals	3	3 (100%)	3 (100%)

As the cleft between English majors and translation students re-appeared, we performed a two-tailed t-test to test whether differences between language learners and (would-be) professionals were statistically significant. Significant results were found for *reading the translation brief* only, and they are shown in Table 82.

These results confirm previous findings that *reading the ST* is highly idiosyncratic and does not necessarily forms the part of expertise. Nevertheless, a large proportion of translation students and all the professionals in our study read the ST before they started translating, although Sean did so only after failing to render the title and the first sentence in Hungarian. This suggests that further investigations on larger samples are needed if we would like to learn more about factors influencing how translators handle the ST. Possible further factors affecting reading the ST are its length, text-type, the translator's previous experience with similar texts, time-pressure, conforming to expectations, and motivation on the part of the

translator. We can assume that translators rapidly assess whether and how much they can profit from reading the text and bring a decision in accordance with the outcome of the assessment.

Table 82 Reading the translation brief. Mean differences between language learners and (would-be) translators. Results of the independent samples t-test.

	Language learners		(would-be) translators		F(p)	t(p)
	Mean	SD	Mean	SD		
Reading the T brief						
TAP (n=16)	0,22 (n=9)	0,44	0,86 (n=7)	0,38	0,61 (0,45)	3,04 (0,01)
Total sample (n=23)	0,80 (n=13)	0,48	0,31 (n=10)	0,42	1,35 (0,26)	2,61 (0,02)

Language learners and (prospective) translators were found to differ with regard to reading the translation brief. The difference is particularly striking in the TAP sub-sample, where novice and expert professionals were nearly four times more likely to read the ST than language learners. This finding clearly indicates an increased awareness in both translation students and professionals concerning the aim and the context of the translation task. Increased awareness can be both the outcome of previous experiences (in the case of professionals) and the result of formal instruction in translation training.

4.3.3.3 Reading the ST/translation brief and translation performance

Table 83 shows correlation coefficients between reading the ST, the translation brief and translation performance as assessed by the three evaluators. Results suggest that performance is largely independent of whether subjects read the ST and the translation brief or not. The only exception can be found in the TAP sample, where reading the translation brief was moderately related to the editor's evaluation. This finding is relatively easy to interpret as the editor was employed to represent a newspaper's requirements and these were the very requirements verbalized in the translation brief.

Table 83 Correlations between performance and the reading of the ST and the translation brief. Spearman rho. ** p<0,01; * p<0,05;

	TAP (n=16)		PT (n=6)		Total sample (n=18)	
	ST	T brief	ST	T brief	ST	T brief
Editor3	0,26	0,53*	0,00	0,00	0,14	0,41
Professor	0,05	0,09	0,00	0,31	-0,04	0,17
translator	0,13	0,30	-0,38	0,38	-0,05	0,34

The lack of connection between reading the ST and the translation brief and performance is slightly puzzling considering the fact that experience was indeed related to reading the translation brief. These results suggest that producing a good translation is not necessarily dependent on reading either ST or the translation brief. Moreover, it implies that experts' and translation students' better performance is most likely not related to reading the ST or the translation brief. It looks as if pre-translation reading would be a requirement or a habit they conform to, perhaps to exhibit professional behaviour, but even reading the translation brief alone does not predict achievement.

It should be noted that the general nature of the source text and what Nord (1997b) calls a default translation brief might have contributed to obscuring relations between achievement and reading the ST or the translation brief, as they did not set any unusual requirements or difficulties for the translators.

4.3.4 The number of run-throughs

The number of run-throughs is considered to convey several pieces of information about the translators. On the one hand, it expresses *macro-level circularity*, that is, how many times the translator feels the need to work through the *whole text*, to return to problems and to modify previous solutions (Kring, 1986b).

The position of run-throughs relative to the writing phase is supposed to communicate characteristics of the translator's style. Jääskeläinen (1999) claims that more run-throughs in the pre-writing phase imply a top-down approach to translation as the translator is assumed "to create the ST scene in order to recreate it in the TT." (Jääskeläinen, 1999, 121). We would argue that top-down and bottom-up approaches cannot be separated so easily in the translation process: at the first run-through Ron's struggles with understanding the source-text implicate bottom-up approaches as he adopts a word-for-word translation strategy to comprehend the ST. On the other hand, a large number of run-throughs in the post-writing phase may indicate a top-down approach too, whenever the translator tries to assess the quality of the TT *as a whole*.

In addition, the number of run-throughs, particularly in the post-writing stage and the revision session might reflect the subjects' readiness to monitor and assess their performance (Sirén and Hakkarainen, 2002).

Before turning to analyzing our sample, we would like to compare here our results with Jääskeläinen's (1999) as some differences can be observed between the two total samples. Table 84 shows the comparison of the mean number of run-throughs in the two studies.

Table 84 Mean values of run-throughs in Jääskeläinen (1999) and the present study

	Pre-writing	writing	Post-writing	total
<i>Jääskeläinen (n=8)</i>	1,375	1	1	3,375
<i>Lesznyák (n=23)</i>	0,70	1	2,30	4

Unfortunately, statistical analysis cannot be performed here, but the differences between the results of the two studies warn against premature generalizations of findings. In our study, subjects were slightly more inclined to work through the text several times. Editing efforts were mostly concentrated in the post-writing phase, whereas the pre-writing run-through was more often neglected than in Jääskeläinen's study. These differences may be due to small sample sizes, but they may originate in the diverging experimental conditions or in cultural differences, too. It cannot be ruled out that both language learners and translators are socialized into different work-schemes, one requiring extensive editing, the other concentrating more on pre-translation planning and orientation. Language pairs may have a part in determining the distribution of run-throughs, too. It is possible that distant language pairs require more editing in the post-writing phase. Nevertheless, we have no reason to suppose that Finnish is closer to English than Hungarian as a result, this assumption cannot explain differences in our case.

To sum up, Jääskeläinen's findings diverge so markedly from ours that many of her conclusions do not seem right in the light of our results. These disagreements will be referred to below.

4.3.4.1 The number of run-throughs by data collection method

The mean number of run-throughs by data collection method is presented in Table 85. (As the writing phase by definition consisted of one run-through for all subjects, no variation can be observed in that variable. Consequently, no further computations can be carried out on it.) Data reveal that there are significant differences between TAP and PT subjects in the number of run-throughs in the revision phase, and as a result, in the total number of run-throughs, too.

Table 85 Mean values of run-throughs in the main session, in the revision session and their sum total. Differences between groups based on data collection method. Results of the independent samples t-test.

	TAP		PT		F(p)	t(p)
	Mean	SD	Mean	SD		
Pre-writing	0,69	0,63	0,43	0,53	0,13 (0,72)	0,99 (0,34)
Post-writing	2,54	1,51	1,71	0,76	4,87 (0,04)	1,35 (0,20)
Main session	4,23	1,59	3,14	1,07	2,45 (0,14)	1,82 (0,09)
Revision	2,64	0,81	1,33	0,82	0,13 (0,72)	3,16 (0,01)
Total	6,82	2,23	4,50	1,87	0,62 (0,45)	2,28 (0,04)

It can be observed that pairs tend to work through the text not as many times as individuals. The reasons for this are unclear, although the observed unease of pairs to read in front of each other (see *Section 4.3.3.3*) may account for this phenomenon, too. Nevertheless, the differences between individuals and pairs suggest again that the data collection methods can have an effect on the translation process. This time, it seems that those who translate alone are significantly more inclined to run through their TTs more times in the revisions session, and possibly to refine it, too.

4.3.4.2 The relationship between the number of run-throughs and experience

The mean values of run-throughs in the main session and its phases and those in the revision session are shown in Table 86. The only significant differences between the groups were found in the PT sub-sample, where English majors were likely to work through the text more times than either secondary school students or translation students (Table 87). Our data, however, do not provide any explanation for this phenomenon. It also runs counter to the tendency discussed above that pair translations on the average can be characterized by a reduced number of run-throughs.

As mere numbers suggested a slight but not linear increase in the number of run-throughs with growing experience and as the cleft between language learners and (would-be professionals) seemed to re-emerge, the statistical significance of the differences between the two groups were tested. The two-tailed t-test proved that there were significant differences between language learners and (prospective) professionals in the TAP sub-sample regarding the number of run-throughs in the *revision session* (Table 88).

Table 86 Mean values of run-throughs in the main session, in the revision session and their sum total. Groups formed on the bases of experience

	experience	N	Pre-writing	Post-writing	Main session	Revision	total
TAP (n = 16)	Secondary school students	4	0,50	2,25	3,75	2,00	6,00
	English majors	5	0,80	2,80	4,60	2,50	6,75
	Translation students	4	0,75	2,50	4,25	3,25	7,50
	Professionals	3	1,33	2,67	5,00	3,33	8,33
PT (n=7)	Secondary school students	2	0	1,50	2,50	1,00	3,00
	English majors	2	1,00	2,50	4,50	2,00	6,50
	Translation students	3	0,33	1,33	2,33	1,00	3,33
Total sample (n=23)	Secondary school students	6	0,33	2,00	3,33	1,75	5,25
	English majors	7	0,86	2,71	4,57	2,33	6,67
	Translation students	7	0,57	2,00	3,43	2,29	5,71
	Professionals	3	1,33	2,67	5,00	3,33	8,33

Table 87 ANOVA of the differences between the mean numbers of run-throughs in the main session. PT sample, groups based on experience.

	PT (n=7)			
	Df	SS	F	p
Between group	2	6,33	7,60	0,04
Within group	4	1,67		
total	6	8,00		

Jääskeläinen (1999) suggested that experiences with the profession may encourage translators to abandon strategies like lengthy revising of the first draft of the TT. As opposed to this view, our findings indicate that the readiness to re-write the first draft does not disappear at all. In fact, mean numbers suggest that this willingness slightly grows with expertise, especially when translation is done individually and particularly in the revision session. As patterns are not clear in our sample, and as they contradict previous findings, the problem should be investigated on larger samples, too. All the more so, as the number of run-throughs may have clear pedagogical implications.

Table 88 Mean values of run-throughs in the revision session. Differences between language learners and (would-be) professionals. Results of the independent samples t-test.

	would-be professionals (n=7)		Language learners (n=7)		F(p)	t(p)
	Mean	SD	Mean	SD		
No. of run-throughs	3,29	0,76	2,29	0,76	0,00 (1,00)	2,48 (0,03)

Jääskeläinen (1999) also proposed that there might be two types of translators: one who concentrates on *orienting* (pre-writing), and one who focuses on *revising*. She suggested that the number of run-throughs is larger in the pre-writing phase and smaller in the post-writing

phase in the case of the first type of translator and the opposite is true for the “reviser”-type. We hypothesized that a negative significant correlation between the number of run-throughs in the pre-writing and the post-writing stage would confirm this assumption. Correlation between the run-throughs in the two phases was, however, near to zero, indicating that the two factors were largely independent of each other in our sample (see Table 89). The lack of significant correlation may be attributed to the small sample size, again, but this time, it coincides with the researcher’s observation that there are a variety of types of translators. In addition to those observed by Jääskeläinen, we find subjects:

- Who were engaged in an approximately equal and low number of run-throughs in all phases (Molly and Sam or Ron: 1-1-1)
- Who were engaged in several run-throughs in both the pre- and the post-writing phases. (Ruth: 2-1-2)

The variety of individual configurations is in fact so high that it is impossible to group them. Thus, the existence of the two translator-types could not be evidenced by our study.

Table 89 Correlations between the number of run-throughs in the pre-writing and the post-writing phase. Pearson r. n =23

	Post-writing (t)
Pre-writing	0,06 (0,81)

4.3.4.3 The association between the number of run-throughs and translation performance

Quantitative statistical analysis could not demonstrate any significant correlations between the number of run-throughs and performance (see Table 90). This may be either due to the small number of cases in the sample or it may suggest that the number of run-throughs in itself does not guarantee good performance. As results on the relations between the quantity of run-throughs and experience were not unambiguous either, further research is called for to answer the question.

Table 90 Correlations between performance and the number of run-throughs in the different stages and phases. Spearman rho. ** p<0,01; * p<0,05;

	TAP (n=16)					PT (n=6)				
	prew	postw	main	revision	total	prew	postw	main	revision	total
Editor3	0,24	0,25	0,33	0,40	0,47	0,00	0,45	0,32	-0,25	0,36
Professor	-0,02	0,20	0,17	0,36	0,32	0,00	-0,21	-0,10	-0,28	-0,13
translator	0,18	0,17	0,23	0,36	0,30	-0,38	0,00	-0,20	0,00	-0,19

	Total sample (n=19)				
	prew	postw	main	revision	total
Editor3	0,12	0,18	0,16	0,14	0,25
Professor	-0,09	0,06	-0,02	0,00	0,02
translator	-0,01	0,11	0,06	0,16	0,12

Qualitative analysis

In Jääskeläinen’s study (1999) the best translators were engaged in more pre-writing run-throughs than the other subjects. We decided to check whether this holds true for our sample, too. Patterns of run-throughs of high-achievers are presented in Table 91. First, there is a

striking difference between pairs and individuals, as pairs were engaged in obviously less run-throughs than individuals. In addition, neither one of the high-achieving pairs had one single run-through in the pre-writing phase.

Although high-achieving individuals had a run-through in the pre-writing stage with the exception of George, there are no extraordinary high numbers in this phase. Nevertheless, the total number of run-throughs is relatively high for individuals (the mean of the total sample was 6,35), but their efforts seem to be concentrated in the post-writing phase and in the revision session.

Table 91 High achievers' number of run-throughs

	Pre-writing	Post-writing	Main session	Revision	total
Ruth	1	3	5	3	8
George	0	1	2	3	5
Ivy	1	5	7	4	11
Tracy	1	3	5	2	7
Mandy and Zoe	0	1	2	1	3
Jill and Bob	0	2	3	1	4

Our findings do not support Jääskeläinen's claim that high achievers would work through the text several times *before* starting to create the first draft. In fact, the distribution of run-throughs does not seem to be a factor effecting performance in our study.

4.3.5 The use of reference materials

The use of reference materials (or information sources) is usually seen as a component in competent translator behaviour (e.g. Gile, 1995; Reiss, 2000; PACTE 2000, 2005). Consequently, several process oriented studies in translation (e.g. Krings, 1986b; Jääskeläinen, 1999; Livjberg and Mees, 1999; Ronowicz et al, 2005) allowed and researched the use of dictionaries. In contrast, some researchers suggested that depriving translators of dictionaries has the advantage of forcing them to engage in more problem-solving. As a result, there are some investigations where subjects were not permitted to use dictionaries (Lörcher, 1991b, Livjberg and Mees, 1999).

We are of the opinion that removing dictionaries may well induce cognitive processes in translators, but they are more likely to be strategic processes of a more or less advanced language learner than that of a competent translator. In consequence, we decided to allow subjects to use dictionaries. Even so, as indicated in the interviews, circumstances were highly artificial for many translators and translation students who were used to using the internet and resources other than printed dictionaries.

Previous research results concerning dictionary use are at odds with each other. Krings (1988) and Jääskeläinen (1999) found that experts engaged in more dictionary searches than laypersons. In contrast, Ronowicz and his colleagues (2005) suggested that the number of dictionary searches decreased with experience. An objective of our investigation was to find evidence in support of either hypothesis.

Analysis was carried out on different aspects of dictionary use. The number of dictionary searches was counted, types of dictionaries used were identified similarly to purposes of dictionary use. The depth of dictionary use was examined, too. The depth of dictionary search refers to the phenomenon when multiple searches are carried out in relation to a single lexical item. These factors were related to the types of data collection, to translational experience and to performance.

4.3.5.1 The number of dictionary searches

4.3.5.1.1 Differences between the two data collection methods

We found that individuals had to search for approximately 4 more words or expressions on the average than pairs in the main session (see Table 92). The number of dictionary searches was so low in the revision session that it did not seem right to perform statistical analysis on them.

Table 92 Mean values of dictionary searches by data collection method

	Mean	Standard deviation
TAP (n=13)	15,08	6,05
PT (n=7)	11,00	4,04

Owing to the small sample size, differences are not significant. Nevertheless, on the basis of them, we can set up the hypothesis that PT and TAP are not equivalent as they elicit different amounts of dictionary use. Dictionary use is seen as a powerful method of translational problem-solving, consequently, changes in it may indicate alterations of the problem-solving process, too. This, however, must be verified on the basis of the content of the protocols.

The reduced number of dictionary searches is probably the outcome of the phenomenon referred to in *Section 4.3.2.1.1*, that is, the possibility that the two translators' vocabularies get combined.

4.3.5.1.2 Differences in the number of dictionary searches by experience groups

Correlation analysis showed significant, moderate to strong correlations between expertise and the number of dictionary searches both in the main and in the revision session. This was observed in the total sample and in the TAP sub-sample, too (see Table 93). Correlations in the PT sub-sample were not significant.

Table 93 Correlations between expertise and the number of dictionary searches. Spearman rho. ** p<0,01; * p<0,05;

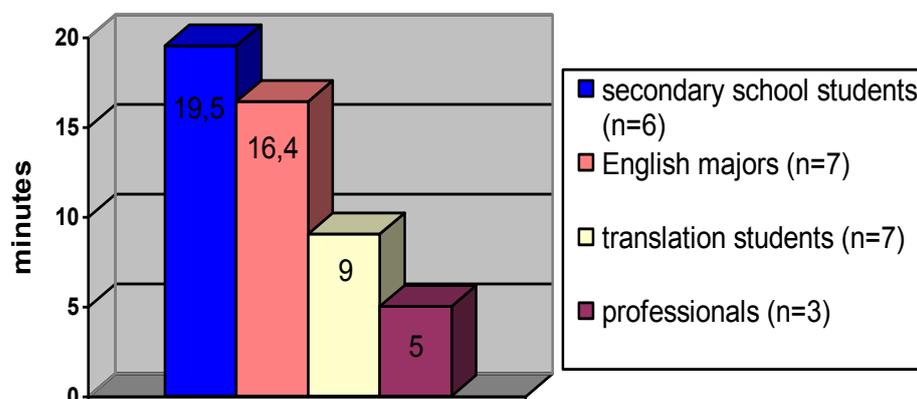
	Total sample (n=23)		TAP (n=16)		PT (n=7)	
	Searches in main session	Searches in revision session	Searches in main session	Searches in revision session	Searches in main session	Searches in revision session
Expertise	-0,71**	0,59** (n=19)	- 0,77**	0,63* (n=13)	-0,49	0,42 (n=6)

Results indicate that the more experienced the subjects were, the fewer items they had to look up in the dictionary while preparing their translations. On the contrary, in the revision session, more experienced subjects tended to turn to the dictionaries more often. The same tendency is shown by the group means of dictionary searches (see Table 94). To indicate the magnitude of differences, group means in the TAP sub-sample are presented in Figure 22.

Table 94 The number of dictionary searches by experience groups. (means and standard deviations)

	Total sample (n=23)				TAP (n=16)				PT (n=7)			
	Main session		Revision		Main session		revision		Main session		revision	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Secondary school students (n=6)	17,83	3,66	0	0	19,50	3,11	0	0	14,50	2,12	0	0
English majors (n=7)	14,57	4,47	0	0	16,40	3,65	0	0	10,00	2,83	0	0
Translation students (n=7)	9,14	5,37	0,57	0,79	9,00	6,38	0,75	0,96	9,33	5,03	0,33	0,58
Professionals (n=3)	5,00	3,61	1,67	1,53	5,00	3,61	1,67	1,53	-	-	-	-

Figure 22 Number of dictionary searches in the main session (means) by experience groups. TAP.



Analysis of variance confirmed that group differences are significant in our sample with the exception of the mean numbers of dictionary searches in the revision session in the TAP sub-sample (see Tables 95 and 96). As expected, ANOVA did not yield significant results in the PT sub-sample either.

Our study lends support to previous findings that report a reduction in the number of dictionary searches as a function of expertise (Ronowicz et al, 2005). Divergent findings (see Krings 1988 and Jääskeläinen, 1999) could be explained by a change in background factors like the type and the difficulty of the ST (see the argumentation in *Section 4.3.2.1* on temporal aspects).

Table 95 ANOVA of sub-groups' dictionary searches in the main session.

	Total sample (n=19)				TAP (n=13)			
	Df	SS	F	P	Df	SS	F	P
Between group	3	448,33	7,37	0,002	3	482,24	8,38	0,003
Within group	19	385,41			12	230,20		
Total	22	833,74			15	712,44		

Table 96 ANOVA of sub-groups' dictionary searches in the revision session.

	Total sample (n=19)				TAP (n=13)			
	Df	SS	F	P	Df	Sum of squares	F	P
Between group	3	6,36	3,79	0,03	3	5,66	2,29	0,15
Within group	15	8,38			9	7,42		
total	18	14,74			12	13,08		

The radical fall in the number of dictionary searches suggests that there must be huge differences in the language competence of the different sub-groups. At this point, however, this is only a hypothesis as dictionaries are not only used for finding unknown words but for finding synonyms or checking spelling, too. Nevertheless, sheer numbers suggest that less experienced subjects rely more heavily on dictionaries when facing certain translation problems.

On closer observation of the data we find that the cleft between language learners and (would-be) translators becomes visible again: English majors are closer to secondary school students in terms of pure numbers than to translation students. Independent samples t-test proved that the difference between the two groups in the TAP sub-sample is significant (Table 97).

Table 97 Number of dictionary searches. Mean differences between language learners and (would-be) translators. Results of the independent samples t-test. TAP sub-sample

	Language learners (n=9)		Translators (n=7)		F(p)	t(p)
	Mean	SD	Mean	SD		
Searches in main session	17,78	3,60	7,29	5,41	0,54 (0,47)	-4,42 (0,001)
Searches in revision session	0	0	1,14	1,21	23,59 (0,001)	2,29 (0,04)

Some individual characteristics should be mentioned here, too. Ron (the medical student) turned to the dictionary 18 times. His dependence on the dictionary made him much more similar to language learners than to translation students. Similarly, Lily used the dictionary 9 times, indicating that her behaviour was closer to that of translation students than to professionals'.

4.3.5.1.3 The number of dictionary searches and translation performance

Similarly to expertise, translation performance showed moderate to strong significant correlations with the number of dictionary searches in the main session. However, no association was found in the revision session and in the PT sub-sample (see Table 98).

Table 98 Correlations between performance and the number of dictionary searches in the two sessions. Spearman rho. ** p<0,01; * p<0,05;

	Total sample (n=18)		TAP (n=13)		PT (n=7)	
	Main session	Revision	Main session	revision	Main session	revision
Editor3	-0,63**	0,42	-0,69**	0,54	0,00	-
Professor	-0,60**	0,38	-0,58*	0,48	-0,46	0,42
translator	-0,68**	0,43	-0,82**	0,42	0,00	0,55

These findings suggest that an extensive use of dictionaries does not predict a good translation performance. Reasons for this are not cleared: both deficiencies in language competence and undeveloped translation competence and problem solving skills may have a part in it. Experience groups were too small to find out how the growth of dictionary searches relates to performance provided the same level of competence is assured.

Qualitative Analysis

A closer inspection of individual cases brought an unexpected result: high achieving pairs were engaged in more dictionary searches than high achieving individuals (see Table 99). Whether it is a simple coincidence or whether high achieving pairs adopted strategies diverging both from those of high achieving individuals and from those of other pairs can only be tested on a larger sample.

Table 99 Number of dictionary searches by high achieving individuals and pairs

Pairs	No. of searches	TAP	
			No. of searches
Mandy-Zoe	10	Ruth	7
Jill-Bob	14	George	3
		Ivy	8
		Tracy	4

4.3.5.2 A qualitative analysis of dictionary use

The issue *how* dictionaries are used by different subjects is perhaps even more interesting than the mere number of searches. Based on Krings (1986b) and Jääskeläinen (1999) the following factors were studied in the qualitative analysis: the purpose of dictionary use, the types of reference materials used and the number of multiple searches.

Relying on the two studies mentioned above and on a deep analysis of Rachel's transcript, the following categories were set up for the purpose of dictionary use:

- **Looking up an *unknown word*:** most of the time, cases belonging to this category were easy to identify. Statements in the protocols like “ezt nem ismerem”, “ez vajon mi lehet?” etc. indicated that a subject started to look for the meaning of an unknown word or phrase. Instances when the subjects formed hypotheses about the meaning of an unknown word were grouped into this category. Nevertheless, sometimes it was difficult to decide whether the subject is checking the meaning of a word she/he already knows (next category) or whether he/she is checking his/her hypothesis. Cases when the translator was looking for ‘another meaning’ of a known word were grouped here, too. After several translations were reviewed, the class was split up into two groups: one of using a *bilingual* and another one of using a *monolingual* dictionary.
- **Checking the meaning of a word the translator claimed or seemed to know:** an obvious example is presented below, although in most cases, it was more difficult to identify these types of searches:

“ez most valószínűleg egy (0,29) polipról szólhat (1,94) aki (1,08) vala- akinek valamilyen speciális képességei vannak, megnézem pontosan itt a (0,70) [octopus]t a szótárban, hogy így jók is(?) (1,10) hogy jók-e a (2,05) a @megérzéseim?” (Pam)

Difficulties arose because subjects often indicated verbally that they were checking a word they know but they were actually looking for another meaning or a synonym.

„Ezt a [jar]t még megnézem. Üveg, inkább ilyen edény (0,64) csak hát most melyik illik ide. [jar] (szótár az A→M, 6,75) Ö itt van [jar]” (Greg)

There were some interesting cases in this category that we would call “within language faux amis” phenomenon. In these cases, subjects decided to *check* the meaning of a word (succession) they thought they knew, but were actually misled by the form of the word.

Checking meaning could also be done with the help of the bilingual or the monolingual dictionary. There was one pair (Jill and Bob) who checked the meaning of shrimp by performing a control search on ‘garnélarák’ in the Hungarian-English bilingual dictionary.

- **Looking for synonyms:** indicators of this purpose were remarks like “megnézem, hátha van még valami jobb szó rá”. If a subject was not explicit enough, it was sometimes difficult to decide whether a subject looked up a known word to check meaning or to find a synonym.
- **Checking spelling:** The category was added later when we found that in a few cases subjects checked spelling. This could be done with the bilingual dictionary or with the guide to Hungarian Orthography.
- **Unidentifiable:** This category was added to the list later as we found some cases that were simply impossible to classify because of lacking verbalization on the part of the subjects.

Purposes of dictionary use were analyzed with the help of these categories.

4.3.5.2.1 Differences in the qualitative aspects of dictionary use by data collection method

We could witness several differences between TAP and PT subjects with regard to the purpose of dictionary use, but in most cases differences were not significant. Mean differences are shown in Table 100. Table 101 shows the significant results of the two-tailed t-tests. As only 9 searches were performed in the whole sample in the revision session, mean values were not computed for revising.

Table 100 Purposes of dictionary searches in the main session in the TAP and the PT sub-samples. Mean values of absolute numbers and relative amounts.

	TAP (n=16)	PT (n=7)
<i>Looking up an unknown word (bilingual dictionary)</i>	10 (62,76%)	5,00 (40,44%)
<i>Looking up an unknown word (monolingual dictionary)</i>	0,54 (2,98%)	1,43 (17,77%)
<i>Checking meaning (bilingual)</i>	2,54 (15,71%)	1,57 (14,56%)
<i>Checking meaning (monolingual)</i>	0	0
<i>Looking for a synonym</i>	1,77 (16,25%)	2,43 (22,86%)
<i>Spelling</i>	0,15 (1,92%)	0,29 (2,45%)
<i>unidentified</i>	0,07	0,16

Table 101 Purposes of dictionary use. Mean differences between TAP and PT subjects. Results of the independent samples t-test.

	TAP (n=13)		PT (n=7)		F(p)	t(p)
	Mean	SD	Mean	SD		
<i>Looking up an unknown word (bilingual dictionary)</i>	10,00	5,37	5,00	3,97	1,29 (0,27)	2,38 (0,03)
<i>Looking up an unknown word (monolingual dictionary) %</i>	2,98	7,73	17,77	20,74	18,82 (0,00)	18 (0,03)

As Table 100 reveals, not only the quantity but the purposes of dictionary use diverge in the two samples, too. As already suggested previously, there is a noticeable drop in the need to look up unknown words when working in pairs. It is somewhat surprising that pairs tended to use the monolingual dictionary more often than individuals both in absolute and in relative terms. It is very difficult to explain this phenomenon. It can be simple coincidence, or the outcome of peer pressure. It is also possible that pairs had more opportunity to look up a word in both dictionaries without losing time, and this led to an increase in the use of the Oxford dictionary. The fact that pairs had a slightly larger number of multiple searches on the average supports this idea, but again, instances are so few in these categories that conclusions cannot be drawn from the results.

The first four categories of purposes are related to ST comprehension and the two categories (synonym and spelling) are linked to TT production. Cumulated values show that 81,45% of TAP subjects' searches were related to solving comprehension problems or uncertainties, whereas the respective value is 72,77% in the case of pairs. These numbers indicate that working in pairs may have an influence on strategies related to reference materials, too: there is a slight shift in the purposes of using dictionaries. Although both pairs and individuals utilize reference materials primarily as tools for solving comprehension problems, pairs are more inclined to turn to them for help in forming the TT. These findings indicate repeatedly that the method of data collection may influence translation processes.

Jääskeläinen (1999) suggested that the depth of the searches can be identified by the number of multiple searches, that is, when a word or phrase is looked up several times or in several dictionaries. The number of dictionaries used, by definition, relates to the depth of the searches, but it also assumed to indicate increased problem-solving activity, heightened distrust in dictionaries and a prolonged decision period before a TL phrase is chosen. Differences regarding the number of dictionaries and the number of multiple searches between the TAP and the PT samples are shown in Table 102. Differences are not significant and they are so small that no further conclusions can be drawn based on them.

Table 102 Mean values of multiple searches and dictionaries used in the TAP and the PT sub-samples.

	TAP (n=13)	PT (n=7)
<i>Multiple searches</i>	0,69	0,89
<i>Dictionaries used</i>	1,33	2,00

4.3.5.2.2 The qualitative aspects of dictionary use and experience

Differences in the purposes of dictionary searches by experience groups are shown in Tables 103 and 104. Two of these divergences proved to be significant in both the total sample and the TAP sub-sample (Table 105).

Table 103 Purposes of dictionary searches in the main session by experience groups. Total sample. Mean values of absolute numbers and relative amounts.

	Secondary school students (n=6)	English majors (n=7)	Translation students (n=7)	Professionals (n=3)
<i>Looking up an unknown word (bilingual dictionary)</i>	12,50 (69,58%)	8,00 (52,94%)	4,86 (44,43%)	3,00 (64,81%)
<i>Looking up an unknown word (monolingual dictionary)</i>	0 (0%)	1,57 (12,09%)	0,86 (11,22%)	0,67 (7,41%)
<i>Checking meaning (bilingual)</i>	3,67 (20,51%)	2,29 (16,18%)	0,86 (9,98%)	0,67 (20,37%)
<i>Checking meaning (monolingual)</i>	0	0	0	0
<i>Looking for a synonym</i>	1,50 (8,87%)	2,57 (18,11%)	1,86 (27,33%)	0,67 (7,41%)
<i>Spelling</i>	0 (0%)	0 (0%)	0,57 (6,02%)	0 (0%)
<i>unidentified</i>	0,17	0,17	0	0

With regard to the two purposes of dictionary use, where significant differences were found (looking up an unknown word and checking meaning in a bilingual dictionary) there is a clear tendency that the number of searches drops with expertise. In addition, we can observe the cleft between the number of searches performed by language learners and by prospective professionals and experts once again. These results support our hypothesis set up in *Section 4.3.5.1.2* that there are considerable differences in the language competence, particularly in the foreign language reading skills of the subjects with different degrees of experience. The number of searches for unknown words can be conceptualised as an indicator of vocabulary size, which is considered to have a relation to reading comprehension (e.g. Qian, 1999; Vidákovich and Cs. Czachesz, 2006; Doró, 2007). We would like to highlight the fact that even translation students performed about twice as many searches as professionals in the TAP sub-sample indicating that there were not only translation competence but language competence differences between the two groups, too. These findings suggest that the role of developing language competence, particularly L2 reading skills and vocabulary in translator training should be re-considered.

Table 104 Purposes of dictionary searches in the main session by experience groups. TAP subjects only. Mean values of absolute numbers and relative amounts.

	Secondary school students (n=6)	English majors (n=7)	Translation students (n=7)	Professionals (n=3)
<i>Looking up an unknown word (bilingual dictionary)</i>	13,75 (69,88%)	9,80 (59,94%)	6,50 (59,18%)	3,00 (64,81%)
<i>Looking up an unknown word (monolingual dictionary)</i>	0 (0%)	1,40 (7,76%)	0, (0%)	0,67 (7,41%)
<i>Checking meaning (bilingual)</i>	4,50 (23,43%)	2,40 (15,99%)	0,75 (7,64%)	0,67 (20,37%)
<i>Checking meaning (monolingual)</i>	0 (0%)	0 (0%)	0 (0%)	0 (0%)
<i>Looking for a synonym</i>	1,25 (6,69%)	2,60 (15,36%)	1,25 (26,93%)	0,67 (7,41%)
<i>Spelling</i>	0 (0%)	0 (0%)	0,50 (6,25%)	0 (0%)
<i>unidentified</i>	0	0,20	0	0

The fact that checking meaning in the bilingual dictionary showed a decreasing tendency with expertise suggests that the connections between the items in the two vocabularies are stronger in more experienced subjects. Translation students' and professionals' efficiency to recall known vocabulary items may provide evidence to Bell's (1991) notion of "frequent lexis store" (FLS). This store, however, is supposed to be *specific to translation competence*, and involves equivalents that are directly available in the mental lexicon.

Table 105 ANOVA of the differences of purposes of dictionary searches in the main session.

		Total sample (n=22)				TAP (n=15)			
		Df	SS	F	P	Df	SS	F	P
<i>Looking up an unknown word (bilingual dictionary)</i>	Between group	3	261,30	4,49	0,015	3	224,89	3,65	0,044
	Within group	19	368,36			12	246,55		
	Total	22	629,65			15	471,44		
<i>Checking meaning (bilingual dictionary)</i>	Between group	3	31,71	3,33	0,041	3	36,82	3,72	0,042
	Within group	19	60,28			12	39,62		
	total	22	92,00			15	76,44		

Qualitative analysis

Translators' behaviour does not seem to show any consistent patterns with regard to other purposes of dictionary search. In the total sample, the *monolingual dictionary* was used most often by English majors, somewhat less by translation students, and hardly any searches were made by professionals. Secondary school students did not turn to the monolingual dictionary at all. We may assume that they were not aware of the advantages of this type of reference material, and probably, they were not used to using it either. On the contrary, English majors demonstrated a typical advanced learner attitude when they made use of the monolingual dictionary relatively frequently. The re-appearing reluctance to draw on this type of dictionary on the part of (prospective) professionals may be a sign of recognizing that this was a translation (and not a comprehension) task, as a result, consulting the bilingual dictionary may be more effective provided the item they look for is included. Nevertheless, the fact that translation students in the TAP sample did not use the monolingual dictionary at all, warns us again, that speculations on this issue can at best be seen as hypothesis because there is a great variability in small samples that can distort the picture.

As for the purpose "*synonym search*" we came across somewhat unexpected results. Previous research (Krings, 1988, Jääskeläinen, 1999) suggested that with growing experience there is a tendency to use dictionary more for the purpose of finding "the right word" than for looking up unknown items. In our study, English majors were most likely to consult the dictionary for synonyms in absolute terms. The readiness to turn to reference materials in case of difficulties with TL formation decreased with experience. Secondary school students showed a moderate affinity to using dictionaries for finding appropriate words or expressions. It can be assumed that secondary school students are either not aware of the fact that they could use dictionaries for findings synonyms or they are so overloaded with the burden of comprehension that they cannot pay appropriate attention to forming the TT. On the other hand, more experienced subjects may more readily find the suitable phrase in the mental lexicon (see FLS above) or have other strategies for finding synonyms. A deeper analysis of the protocols may shed light on this problem. It must be stressed again, that characteristics of the source text and the reference materials and sources provided might have shaped the results. Another text or other

resources might have induced more synonym search on the part of the more experienced subjects.

Checking spelling as a purpose of dictionary use appeared only in the translation student sub-sample. It can be regarded as a sign of heightened problem solving efforts originating in an increased awareness of translation problems and norms, a phenomenon typical for would-be translators already referred to by Jääskeläinen (1999).

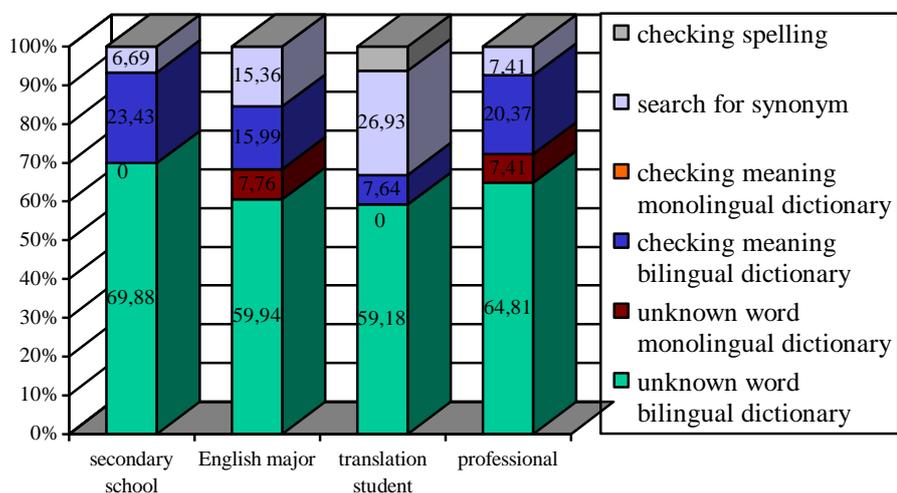
The relative weight of the purposes in the different sub-samples shows an interesting picture, too (Tables 103 and 104, Figure 23). It was found that proportionately, professional translators used dictionaries for comprehension purposes most often. 92,59% of all their searches were related to clarifying the ST. Respective values were 90,1% (TAP 93,32%) for secondary school students, 81,21% (TAP 83,69%) for English majors and 65,63% (TAP 66,82%) for translation students. This reinforces what we have suggested in the previous paragraphs: experts only seldom used dictionaries but if they were forced to do so, they looked up or checked words and phrases primarily in a bilingual dictionary. They solved TT-related problems, like finding appropriate synonyms or checking spelling by other means.

On the contrary, the large proportion of comprehension related searches in the secondary school and English major sample can be a sign of insufficient vocabulary as it is coupled with a large absolute number of searches. Whatever their reasons might have been, these three groups used dictionaries primarily for comprehension purposes.

Translation students, on the other hand, were engaged in proportionately more TL form-related searches. The interplay of several factors could have contributed to this pattern of dictionary use. These factors include:

- a decrease in the need to look up or check words;
- an awareness that the TT should be well-formed;
- *and* lacking automation concerning the formation of the TT

Figure 23 The proportion of the purposes of dictionary searches by experience groups in the TAP sub-sample



Searches in the revision session

As already mentioned, only 9 searches were carried out in the revision session as opposed to the 288 searches in the main session. The nine cases are presented in detail below:

Translation students: Jill and Bob = 1 (checking meaning - monolingual)

George = 1 (synonyms)

Ivy = 2 (2x synonyms)

Professionals: Sean = 3 (3x synonym)

Lily = 2 (unknown word - bilingual, synonym)

As can be seen, only translation students and professionals turned to reference materials in the revision session. Differences between the number of the searches of the two groups (language learners and (prospective) professionals) proved to be significant (see Table 106). Based on this result, we can set up the tentative hypothesis that language learners, as opposed to (would-be) professionals, are not aware of the importance of using reference materials in the revision session. This may reflect a less conscious approach to editing the drafts of the TT.

Table 106 Number of dictionary searches in the revision session. Mean differences between language learners and would-be professionals. Results of the independent samples t-test.

	Language learners (n=19)		(would-be) professionals (n=9)		F(p)	t(p)
	Mean	SD	Mean	SD		
<i>Number of dictionary searches</i>	0,00	0,00	0,90	1,10	23,30 (0,00)	2,45 (0,03)

Moreover, 7 of the 9 searches were performed to find synonyms indicating that dictionary use in this session was more related to TT formation than in the main session.

Correlation analysis refers to a moderate relationship between expertise and the number of synonym searches in the revision session (see Table 107). As pairs did not perform any synonym searches in the revision phase, no correlations could be calculated for them.

Table 107 Correlations between expertise and the number of synonym searches in the revision phase. Spearman rho. * p<0,05;

	Number of synonym searches	
	Total sample (n=19)	TAP (n=13)
Expertise	0,55*	0,60*

To conclude, more experienced subjects are more likely to use the dictionary in the revision phase and they do so primarily with the purpose of finding synonyms.

Multiple searches and the number of dictionaries used

The number of dictionaries used and the amount of multiple searches were supposed to grow with experience. As Table 108 shows, however, no regular patterns were found in our study. ANOVA brought no significant results either.

Table 108 Mean values of multiple searches and dictionaries used in the TAP and the PT sub-samples.

	Multiple searches			No. of dictionaries used		
	TAP (n=15)	PT (n=7)	Total sample (n=23)	TAP (n=16)	PT (n=7)	Total sample (n=22)
<i>Secondary school students</i>	0,25	0	0,17	1,00	1,00	1,00
<i>English Majors</i>	1,20	1,00	1,14	1,75	2,00	1,83
<i>Translation Students</i>	0,50	1,33	0,86	1,25	2,66	1,86
<i>Professionals</i>	0,67	-	0,67	1,33	-	1,33

A more clear-cut picture could only be expected if the problems were examined on a larger sample. Characteristics of the text may have contributed to masking possible differences between sub-groups as no particularly problematic lexical items were to be found in it.

4.3.5.2.2 *The qualitative aspects of dictionary use and performance*

Relatively few significant correlations could be established between the qualitative aspects of dictionary use and performance. Those found are presented in Table 109. Because of small sample size hardly any significant correlations were found in the PT sub-sample.

Table 109 Significant correlations between aspects of dictionary use and performance. Spearman rho. ** p<0,01; * p<0,05

	Unknown word - bilingual			% of synonym search			Checking spelling		
	TAP (n=15)	PT (n=7)	Total sample (n=23)	TAP (n=16)	PT (n=7)	Total sample (n=22)	TAP (n=16)	PT (n=7)	Total sample (n=22)
<i>Editor3</i>	-0,63**	n.s.	-0,56**	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
<i>Professor</i>	-0,52*	n.s.	-0,61**	n.s.	0,76*	0,51*	n.s.	n.s.	0,49*
<i>Translator</i>	-0,83**	n.s.	-0,69**	n.s.	n.s.	0,51*	n.s.	0,84*	0,53*

NB. n.s.: non-significant

Table 109 contd.

	% of checking spelling			Using orthography guide			Checking meaning	Synonym search -revision
	TAP (n=15)	PT (n=7)	Total sample (n=22)	TAP (n=16)	PT (n=7)	Total sample (n=22)	TAP (n=16)	TAP (n=16)
<i>Editor3</i>	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0,56*
<i>Professor</i>	n.s.	n.s.	0,49*	n.s.	n.s.	0,50*	n.s.	n.s.
<i>Translator</i>	n.s.	0,83*	0,53*	n.s.	0,84*	0,53**	-0,60*	n.s.

The correlations are typically moderate to strong and they seem to be related to language competence and expertise. The most striking finding is the moderate to strong negative correlation between the number of searches for the meaning of an unknown word and performance. It looks as if the mere number of these types of searches could predict performance, particularly for TAP subjects and for professional standards. Vocabulary size, it seems, is not only an important constituent of expertise but a factor determining performance, too.

The other factors that have significant correlations with performance are related to producing a well-formed TT (synonyms and spelling). These relations, however, are weaker and less systematic. As already suggested in the previous section, there might be other strategies than dictionary use available to solve these types of problems, consequently performance is not so strongly dependent on them.

4.3.5.3 Conclusions on dictionary use

In summary, we found evidence that there are differences between the quantity and the quality of dictionary use between pairs and individuals, which can have methodological significance. More importantly, it was discovered that both experience and performance were strongly related to the number of dictionary searches, and particularly, to the number of searches for the meaning of unknown lexical items in the bilingual dictionary. These results underline the importance of vocabulary size in translation competence.

Findings related to other aspects of dictionary use are not so clear-cut. Contrary to expectations, the number of dictionaries used and multiple searches did not show any consistent connections to expertise or performance. Purposes of dictionary use that are more closely linked to TT-formation seem to be prominent in the group of translation students and they are also moderately related to performance. Nevertheless, further research is needed, perhaps with other types of texts and with larger samples to arrive at a more precise picture concerning the functions of dictionary use.

There are some didactic consequences of our findings. First, findings on the number of dictionary searches suggest that developing language competence should not stop at a supposedly high level. The issue whether students should be advised to use dictionaries for diverse purposes is more complicated. The high variability of purposes in translation students' processes implies that they are probably instructed to do so. Language learners, and particularly secondary school students, on the other hand, could probably not profit much of such suggestions because their problems lie elsewhere as suggested by the large number of unknown words in the text. Nevertheless, possibly language learners could benefit from some guidance regarding dictionary use, as some of them were not even familiar with abbreviations in them.

Finally, we must note, that we have not met any blind adherences to the suggestions of reference materials, a typical problem of language learners, well-known for most of us and documented by Krings (1986b). Any strange or bizarre solutions were due to the translators' fantasies like Meg's idea to use the Hungarian word "páncél" as an equivalent for the English "jar".

4.4 Summary of the findings of the small-scale, process-oriented investigation

In this part of the dissertation some observable aspects of the translation process have been analyzed both by quantitative and qualitative methods. In this chapter, findings will be summarized in two sections: first we will draw a tentative conclusion regarding the use of pair translation and the TA method. Then a review will be given of how certain aspects of the translation process change with expertise. Finally, directions for further analysis will be offered.

First, however, the importance of a finding that has both theoretical and didactic relevance should be underlined. We found that the traditional division of the translation process into pre-writing, writing and post-writing *phase* is highly questionable from a functional point of view. We do not doubt that splitting up the process into phases has certain technical advantages: it enables us to structure the temporal progression of the translation process and facilitates conceptualizing the process. However, the functional adequacy of the phases was not validated. Functions like orienting, searching, writing, checking, revising seem to be distributed throughout the whole process, although they may be dominant in one phase. The concept of circularity also contradicts the idea of strict translation phases. Evidence against the existence of functional phases included problems with defining boundaries, on the one

hand, and the lack of meaningful relations to other aspects of the translation process and to experience or performance, on the other hand.

The theoretical relevance of this finding is that the translation process should be viewed as a functional whole. Splitting it up into phases conceals the fact that the translation process is a unit in itself. This idea is very similar to the one voiced by Sirén and Hakkarainen (2002) who stress the unity of the text and the translation process, but from the point of view of problem solving.

The didactic implication of the finding is that it is irrelevant to instruct students to do certain things before or after writing the first draft. Certainly, there are specific sub-tasks in the translation process that must be fulfilled, but it seems more or less irrelevant in which phase they are done.

4.4.1 Thinking Aloud and Pair Translation contrasted

One of the most significant findings to emerge from this study is that Thinking Aloud and Pair Translation probably cannot be hypothesized to be equivalent data collection methods. The presence of a partner seems to affect the translation process fundamentally. Indirect evidence supporting this assumption was found in relation to:

- *Performance*: pairs tended to produce better translations;
- *Translation time*: pairs needed less time to complete their translations;
- *Number of run-throughs*: pairs tended to work through the text fewer times than individuals.
- *Use of dictionary*: pairs used the dictionary less often than individuals. Particularly the number of searches for the meaning of unknown words fell drastically.

Key importance can be attributed to the differences in dictionary use, as it is directly related to translational problem solving. Consequently, radical changes in the number of dictionary use suggest fundamental changes in problem-solving strategies, too. It could be argued that differences in language competence could account for the differences found between the TAP and the PT group. However, protocols suggest that pairs can combine their vocabulary (and perhaps even other language and cognitive skills) and use the advantage of “having two heads”. Similarly, distribution of work may contribute to more efficient (e.g. quicker) work, but it also implies fundamental changes in the translation process as one individual gets involved in only one task (e.g. dictionary use) and the other one in another task (e.g. typing).

Taken together, these results confirm previous hypotheses (e.g. Kussmaul and Tirkkonen-Condit, 1995; Jääskeläinen, 2000; Bernardini, 2001) that pair translations provide data on how pairs translate and *not* on the cognitive processes present in individual translations. This does not mean that pair translation should be abandoned as a data collection method. It could be well used for detecting advantages of translating in pairs as opposed to working alone and vice versa. Pair translation seems to be very well suited for educational purposes, too, because the recordings and the numerous smileys in the protocols suggest that pairs worked in a more relaxed and positive atmosphere and learned from each other. This assumption was reinforced by Wendy at a later consultation, where she claimed to have learnt so much from cooperating with Jane that the participation in the study turned to be a long-lasting experience for her.

However, with a small sample size, caution must be applied when generalizing findings. Some of the differences were not significant between the two groups, and even significant differences cannot be presumed to be universal, as the sample is more probably than not, specific. Only research on a larger sample could give more definite answers to the question whether pair translation and TA are interchangeable data collection methods or not.

4.4.2 Indicators of the development of expertise in translation

The general tendency revealed by our study is that with growing experience translators tend to produce *better translations in less time*. This efficiency, however, is not coupled with a superficial attitude or with absolute automation. The fact that the number of *run-throughs* grew with experience, too, refers to a heightened awareness to control one's own work, which can be regarded as a sign of expertise (Sirén and Hakkarainen, 2002). It may also signal a more global approach (i.e. professionals want to see the target text as a whole) as opposed to spending most of the time solving micro-level problems. Obviously, automation of solving micro-level problems (e.g. lexical problems, see the paragraph on dictionary use below) allows more experienced translators to free capacities for higher-level problems.

In particular, we can observe a heightened sensitivity in (would-be) translators to revise their TTs. They spent more *time* on revising the text in a separate *revision session*, the number of run-throughs related to revising was higher for them, and dictionary use in the revision session could only be detected with translation students and experts. Moreover, these searches were mostly directed at finding synonyms, that is, at refining the TT.

More experienced subjects also showed a heightened sensitivity to contextualizing the task at the beginning of the translation process. This was evidenced by their increased willingness to *read the translation brief* prior to translation. In contrast, they were not more inclined to read the ST before starting to translate than language learners. Interestingly enough, these two factors do not seem to be related to actual translation performance.

Marked differences could be observed between sub-groups in *dictionary use*, too. In the main session, the use of reference materials *clearly decreased with expertise*. As the use of dictionaries is an indicator of translation problems, the decrease in use implies less comprehension-related problems and/or the application of other problem-solving strategies. Striking is the decline in the category of searching for the meaning of unknown words in the bilingual dictionary. It indicates *differences in vocabulary size*, an issue seldom touched upon in the literature on translational expertise. The problem may lie in the fact that language competence is taken for granted in translation training, consequently, questions relating to differences in it are not discussed.

Turning to the quality of dictionary use, we found that neither multiple searches nor the number of dictionaries used seem to differentiate between subjects with different levels of experience. This does not mean that the factors mentioned above are irrelevant from the aspect of expertise. The source text and the reference materials provided may be responsible for hiding the differences between experience groups.

As regards aims of dictionary use, regular patterns were difficult to find: TT related aims were most prevalent in the case of translation students. We hypothesized that they needed printed help to solve certain problems. Professionals seldom used dictionaries in the first session to find synonyms, which we interpreted as a sign of using other strategies to solve TT-related problems.

Inconsistencies with previous findings (e.g. Krings, 1986b, 1988, Gerloff, 1988, Jääskeläinen, 1999, Sirén and Hakkarainen, 2002) may be explained by diverging research conditions: the task in our study must have had a routine character for the professionals, thus classic features of expert behavior could be elicited. Diverging research results, however, do not create tension or conflict in our image of translational expertise. They complement rather than contradict each other. Our study proved that certain elements in the translation process do work smoothly for professionals. This nearly effortless and elegant work enables the expert translator to concentrate on more problematic elements in more difficult contexts. He or she has simply more free capacities to tackle challenging problems than less experienced translators. It can be assumed that previous research concentrated on difficult or more specific

texts with more challenging problems and this resulted in the observed differences in research results.

4.4.3 Suggestions for further analysis

The current study has only examined some easily quantifiable aspects of the translation process. Some of these aspects could be further analyzed like dictionary use or the translator's awareness regarding the translation brief. The latter issue could be examined by counting references to the requirements of the translation brief.

As for dictionary use, one of the most interesting questions is how the subjects handle the information they find there. Unfortunately, most accounts of this aspect of dictionary use are episodic (Krings, 1986b, Jääskeläinen, 1999). It is also very difficult to see how the issue could be analyzed systematically.

Another interesting problem relates to the words themselves that were searched by the different groups and the reasons for searching these items. Interestingly enough, there are words that were not problematized by language learners, but were extensively searched for by translation students and professionals (e.g. aquarium). This could be a sign of the phenomenon Jääskeläinen referred to, that language learners do not even recognize certain translation problems.

Furthermore, translation problems and strategies aimed at solving these problems should be studied. Similarly, revisions and alterations in the TT could be analyzed with the help of log files recorded by Translog.

It should be noted that the ability to verbalize one's own activity while solving a problem (i.e. thinking aloud) is often linked to metacognitive skills. It could be examined whether explicitness of the protocols is related to expertise or to the quality of the translations in any ways. Metacognition is supposed to be a constituent of expertise and a factor promoting high achievement.

We could also study whether reasoning and justification for decisions changes as a function of expertise. At a first glance, it seems that language learners' primary concern is not to repeat the same words too often. It would be interesting to see whether arguments for decisions become more varied with experience, and if so, how.

If detailed error analyses were performed on the translations, it could be examined whether problematic segments are produced automatically or are the outcomes of problem solving efforts.

Evaluative statements in the protocols could offer information both on translators' monitoring skills and on their translation-related self-concept, too.

Last, but not least, applied linguists may be interested in gender differences in TA produced talk. This may have methodological importance, too, as female protocols tend to be longer than male protocols. It is an open question whether female's protocols are more informative, too, or not.

The analysis of pair translations raises many questions. First, it is possible that a problem indicator scheme distinct from those usually applied in analysing TA data (e.g. Krings, Jääskeläinen) should be developed. It is very difficult to decide what constitutes a translation problem for a pair. Is it only a problem if it is a task to be solved for both partners or is it enough if it is a challenge for one of them? Problems like this suggest that the qualitative analysis of pair translations must follow a different route than that of TA analysis. One more interesting issue should be mentioned here. As already suggested, pairs must cope with the problem of working together. The researcher has the impression that the different couples chose very different strategies to solve this problem. As a result, it seems reasonable to study

cooperation and competition strategies in the protocols and examine their influence on the process and the product of translation.

Finally, it is suggested that PT and TAP should be compared and contrasted on as many aspects of the translation process as possible to gain more evidence for their distinctness, or for their similarity.

5. SUMMARY

The institutionalisation and the expansion of translator training have led to a growing interest in translation competence and its development. The research efforts presented in this dissertation were designed to contribute to the growing body of knowledge on translation competence.

The aims of the dissertation included

- Offering a state-of-the-art review on the theoretical aspects of translation competence and its evaluation;
- Gathering information on the existence, on the composition and on the development of natural translation competence.
- Working out and testing some methods for translation assessment
- Comparing laypersons' and professionals' translation processes and thereby, gaining insight into developmental processes
- Comparing and contrasting *Thinking aloud* and *Pair translation* as data collection methods.

5.1 Theoretical background

In the first part of the dissertation theoretical issues were discussed. First different definitions of translation were reviewed and we accepted the definition of translation as a communicative activity.

Next, a brief overview of some translation theories was given to create a theoretical framework for the study.

Linguistic theories were characterized as approaches that account for translation on the level of sign systems. Communicational context, function or psychic processes of translation are usually not dealt with by these theories. As opposed to the static view of linguistic theories, functionalists perceive translation as a form of human interaction, a specific form of communication. As a result, the purpose of interaction (*skopos*) becomes the central concept in their theory.

In our approach to translation ideas of both functionalist and linguistic theories play an important role. An integration of linguistic and functionalist viewpoints is advocated by some recent studies as well (e.g. Klaudy, 2003; Mossop et al., 2005)

The direct impact of translation theories on our research can be described as follows: *Functionalism* affected the principles of the investigation:

- the idea that translation is viewed and investigated as a communicative act (and not as a mere linguistic transfer),
- the principles guiding text selection,
- the use of the translation brief,
- the principles of evaluation,
- the idea of positive evaluation,
- Nord's typology of errors

originated from functional theories.

The *linguistic approach* can be related to the translation competence concept we could accept. Text-linguistic theories and typologies were drawn upon in text selection and translation errors were recognized in language.

In *Section 2.3* translation competence models were presented and analysed. We have seen that most translation competence models belong to the category of “*specialized cognitive competences*” but there are models which carry features of the *competence-performance model*, the *action competence model* or the *subjective competence concepts*, and *motivational*

action tendencies. We have also shown that metacompetences and key competences play an important role in the functioning of translation competence.

Some sensitive issues related to translation competence were discussed as well. These included the relationship between translation competence and language competence, the relation between natural and professional competence and the question whether competence is linked to the direction of translation (L1→L2, L2→L1). These problems are far from resolved, in consequence, they offer good starting points for further research.

After reviewing the models we came to the conclusion that none of the models presented in our study is inherently better than the others. It always *depends on the aims* of the researcher or the trainer, which model suits his/her purposes best.

For our empirical research the holistic model of the PACTE group was accepted as a framework. The advantages of the model included its sound theoretical and empirical basis, its comprehensive nature and the fact that it can be operationalized with relative ease. The components of the model include:

- A strategic sub-competence
- A knowledge about translation subcompetence
- An instrumental sub-competence
- A bilingual sub-competence
- An extra-linguistic sub-competence, and
- A psycho-physiological sub-competence.

In the following section the present state of translation evaluation was described. We claimed that there is a dearth of research on the topic although translation evaluation is definitely practised both in academic and professional environment.

We have reviewed both empirical and theoretical studies. On the basis of them we made a catalogue of task-types used in translation assessment, reviewed text selection criteria and related problems. TT-related evaluation methods, including holistic evaluation, error-analysis and positive evaluation were also discussed. In addition, typologies of errors were presented. The overview of the available literature suggests that several evaluation methods are operated in training institutions, there are, however, only few planned and verified evaluation systems. The fact that psychometric properties of the evaluation methods are not checked causes special problems. On the one hand, distrust against translation evaluation and doubts concerning its legitimacy mentioned by several authors (e.g. Hatim and Mason, 1997; Klein-Braley and Smith, 1985; Stevenson, 1985; Heltai, 2005) may be rooted in this phenomenon. On the other hand, the lack of providing the psychometric indices of the evaluation methods contributes to and perpetuates the lack of empirical research, particularly that of correlational studies. If a factor cannot be characterized by reliable numbers, no meaningful relations can be established with other factors via statistical methods.

After realizing the problems described above, we have decided to test several evaluation methods in our study to discover their strengths and weaknesses and to determine their psychometric properties as precisely as possible.

In the last theoretical chapter we reviewed TA methodology and process-oriented research in translation studies. In addition, peer translation and computer logging techniques were summarized. The section began with an overview of methodological issues: the information processing model of cognitive psychology was presented in brief then types of verbal reporting, potential problems of verbal reporting and the methodology of analyzing protocol data were discussed relying mainly on Ericsson and Simon (1999). We came to the conclusion that TA can be a reliable data collection method provided that the guidelines given by Ericsson and Simon are strictly followed.

The overview of TA methodology in translation studies indicated that the rigorous requirements of process-oriented cognitive research are not always fulfilled in translation research. Nevertheless, there is a growing body of research results based on reliable data.

The overview of these research reports was slightly problematic as process-oriented studies of translation are somewhat heterogeneous. Even researchers claiming to study the same phenomena work from entirely different backgrounds, use different subjects and interpretation methods. Due to theoretical and methodological abundance and divergence, there is a rapidly growing body of often contradicting findings that cannot be compared or synthesized. Nevertheless, there are recurring themes and outcomes in the investigations on the basis of which some assumptions could be made about the translation process. They were summarized as follows:

- The translation process is not a uniform phenomenon, whose structure or working can be described unequivocally. Accordingly, the search for an ideal process proved unsuccessful. Several factors, like the difficulty of the text, familiarity with genre and text-type, time pressure, the accessibility of reference materials or the direction of translation bear an influence on the progression of translation. There are also crucial individual differences that are not essentially related to competence differences and they do not necessarily lead to achievement differences either.
- Nevertheless, some strategies and tactics could be identified that seem to be inconvenient for communicative translation, but that are sometimes resorted to in case of difficulty (e.g. translating without understanding, sign-oriented translation, concentrating on small segments etc.). It is important to emphasize that both novices and experts demonstrate these types of behaviour, although on the basis of the data we can hypothesize that non-professionals fall back to such strategies more often.
- Expert behaviour is not uniform either. Some studies demonstrate that professionals can choose from several global and local strategies, too.
- Although professionals are far from being a homogeneous group, they can be clearly distinguished from other laypersons like language learners or bilinguals. Differences emerge in frequent lexis store, speed of translation, unit of translation, and translation strategies, although results are not unambiguous in some respects.
- In certain conditions (non-routine tasks, difficult texts etc.) experts may employ similar strategies as novices. It is not clear whether these strategies prove useful in the hands of experts or not.

At the same time, there are some points on which research results contradicted each other. They include:

- The speed of translation as a function of experience (see Krings, 1988 and Jääskeläinen, 1999 as opposed to Ronowicz et al, 2005, Dragsted, 2005)
- The number of translation problems identified and worked on as a function of experience (Krings, 1988 and Jääskeläinen, 1999 vs. Jensen, 1999)
- The number of dictionary consultations as a function of experience (Jääskeläinen, 1999 vs. Ronowicz et al., 2005)
- Acting in accordance with a translation brief as affected by experience (Krings, 1986 vs. Jääskeläinen, 1989)

However, the translation process is so complex and it is influenced by such a multitude of background factors that it may be impossible to give definite answers to these questions. A merit of process-oriented studies is that they shed light on this complexity and help to form more mature views on translation and its sub-processes.

The pressure to produce novel research results often forces scholars to turn to new questions before previous ones have been cleared. This is exactly what is happening in process-oriented translation research. Except for Jääskeläinen's (1999) and Atari's (2005) investigations, there were no initiatives to replicate a previous experiment or to use the categories or the methodological tools and findings of a preceding study. Considering how small samples are in TA research, it seems obvious that studies with a similar framework could contribute to reinforcing earlier results and to gaining a deeper understanding of certain processes instead of only expanding the list of factors we have tentative hypotheses about. Consequently, we decided to base our investigation on Krings' and Jääskeläinen's research. The reasons for selecting these two studies were mainly methodological: among several vague examinations they provided a reliable basis for an empirical inquiry.

5.2 The theoretical framework of our study

At the end of the theoretical introduction we presented the most important ideas our research was based on. These were the following:

Translation was conceptualized as a communicative activity. In this sense, translation is mediating between cultures, and both language learners and professional translators are able to translate, although their mental processes are presumed to diverge.

We relied on *both linguistic and functionalist theories* and concepts when planning and accomplishing our research. Functionalist ideas (translation as communication, translation brief, positive evaluation) were primarily employed in the macro-level of the investigation and linguistic theories were mainly utilized in solving micro-level problems like text-selection and the evaluation of individual TTs.

The multicomponential model of the PACTE research group was accepted as a *translation competence model* serving as a background for our investigations. The advantages of the model included its comprehensiveness, and its operationalizability. The model, is, however, so complex that only few elements could be examined in our study. These included the bilingual sub-competence, instrumental sub-competence and psycho-physiological sub-competence. It should be noted that the collected data can further be used to shed light on strategic sub-competence and on "knowledge about translation" sub-competence.

As there are several *evaluation methods* in use but they are highly disputed and, as we have referred to it above, seldom verified, we decided to try all three techniques at least in the pilot study. The tested methods were holistic evaluation, error-correction and positive evaluation. Stansfield et al's (1992) categories were selected for holistic evaluation, Hurtado's (Martinez Melis and Hurtado Albir, 2001), Sager's and Kupsch-Losereit's (1985) classifications of errors were integrated and modified for error detection and Nord's (1991, 1992a,b, 1996, 1997a,b) categories were employed in positive evaluation.

In our *process-oriented* examination we relied on Krings' (1986) and Jääskeläinen's (1999) models as they were found to be the most consistent from a methodological point of view.

The think aloud technique was supplemented by computer logging and by interviews to live up to the requirement of triangulation. Pair translations were also carried out to test the differences between the two methods of data collection.

5.3 Findings on natural translation competence

Our empirical studies involved a large-scale quantitative survey of natural translation competence and a process-oriented research on the development of translation competence.

The objectives of the large scale survey included:

- 1) To find evidence that natural translation competence exists
- 2) To prove that this competence develops as communicative competence grows (though it *cannot* turn into expertise without appropriate training and experience)
- 3) To identify background variables which influence the development and the functioning of natural translation competence.
- 4) To find valid and reliable methods for assessing translation competence

The sample of the study consisted of 502 Hungarian students learning English at school. Students were selected from the original sample of the Foreign Language Project.

The data collection instruments included:

- A communicative language test consisting of subtests of L2 writing, reading and listening (see Appendix 1)
- A test of inductive reasoning with three subtests: numerical analogies, verbal analogies, and number series (see Appendix 2)
- A questionnaire gathering information on students' attitudes to school, and to different subjects. This questionnaire was used to collect data on some social background variables of students (parents' qualifications, type of settlement) and on school achievement (grades/marks in different subjects) too (see Appendix 3)
- A questionnaire on attitudes to language learning (see Appendix 4)
- A translation 'test': the translation of a text with the help of a bilingual (English-Hungarian) dictionary; a translation brief was attached to the task. (see Appendix 5)
- A questionnaire collecting information
 - on students' task perception (how difficult the task was for them, what the major difficulties were),
 - on the use of additional reference material (if they had any ideas what other tools they could have used),
 - on some quantitative indicators of language learning (how long they had been learning English, how many English classes they had a week),
 - on grades in English, Hungarian language and literature at the end of the first semester, and
 - on how often they translated in English lessons (both direction). (see Appendix 6)

Data collection took place in April 2003. Students had to translate the text from English (L2) into Hungarian (L1) with the help of a bilingual dictionary (dictionaries were provided by the schools). Students had 30 minutes to complete the translation and 15 minutes to fill in the questionnaire.

The instruments used in the large-scale survey were tested in a pilot study. The pilot study helped us decide on the source text. It offered some insights into the advantages and disadvantages of some evaluation methods, on the basis of which we decided to apply holistic evaluation and positive evaluation in the large-scale survey.

The questionnaire attached to the translation task in the pilot study was originally designed to assist us text selection. The data obtained with it proved that the text we chose was moderately interesting to students and it was not rated too difficult by them.

At the same time, there were some questions on the questionnaire that yielded interesting results in the pilot phase. Consequently, we decided to modify and use the questionnaire in the large-scale survey, too to reveal relations between background factors and translation performance.

5.3.1 Results of the survey

Statistical analysis was performed on the data collected from the students. The most important results are presented below in three sections.

Evaluation methods

Three evaluation methods were tested in our study: error-analysis, positive evaluation and holistic evaluation.

Error-analysis was rejected after the pilot study because of its predicted inefficiency in large-scale surveys. Inefficiency in this context means massive investment in terms of time, energy and money with questionable gains. The main shortcomings of error-analysis were its unrelatedness to other methods, the over-representation of TT errors and its failure to account for untranslated text segments.

However, it cannot be concluded that error-analysis is in itself an ineffective method, but that it was simply not suited for the design of our study. It is very probable that error-analysis can be a valuable method in small-scale investigations, in formative evaluation, or if error-categories were re-defined.

The testing of *positive evaluation* brought ambiguous results. It turned out to be extremely challenging to design a satisfactory test that is both valid and reliable. Particularly, problems above word-level are very difficult to define and it is similarly difficult to decide whether the problem has been solved or not. As a result, employing two raters cannot be spared in positive evaluation. However, once the test was ready, it was very easy to work with it: correction was less time-consuming than in the case of error analysis and statistical analysis was made possible.

Factor analysis of our positive test did not fully support the psycholinguistic reality of Nord's translation problem categories, but it brought some evidence that problems can be divided into two large groups: those requiring creative and those requiring conventional solutions.

Holistic evaluation proved to be a useful tool in our large-scale survey. Validity was ensured through descriptors, and this was paralleled with high interrater reliability indices. Holistic evaluation cannot provide a detailed picture of translation competence but it is very well suited for the characterization of developmental tendencies in large scale samples. Holistic evaluation brought meaningful results and associations with other variables.

Natural translation competence and its development

Our results supported the views that translation is a competence that begins to develop as soon as a second language competence begins to form in the mind. Nevertheless, performance on the translation task suggests that translation competence is in a fairly embryonic form in year 7. There is a huge development between grade 7 and 11 but on the basis of data collected in our study it is impossible to tell what proportion of this growth is accounted for by an advance in language skills, an increase in world-knowledge and by gaining experience in translation itself.

The findings suggest that information transfer is more developed in both age groups than expression. Concentrating on conveying correct information in whatever form could be a characteristic of natural translation competence, but further research is needed (e.g. comparison with professionals) before a definite statement can be made on the issue.

Variables related to translation competence

Results concerning background variables of translation competence will be discussed with reference to the PACTE model, as this was chosen to be the framework of our study and as this is the only model we know that can, in fact, incorporate our findings.

Strategic sub-competence could not be studied in the large-scale survey. Because of the nature of this sub-competence, it is process-oriented research that can offer some insight into its workings.

Two further sub-competencies, knowledge about translation and instrumental sub-competence could not be studied directly either. Examining *knowledge about translation* would require the use of an additional questionnaire or interviews. However, taking into account the age of the population and the amount of experience they have had with translation it is probably not worth the effort to collect data on this factor. Natural translators are not likely to be aware of theoretical considerations relating to translation, neither are they expected to be. Obviously, intuitive insights may help the natural translator to maximize his or her performance but this, again, can be best detected in small-scale surveys by interviews.

Nevertheless, the rating of different types of translation problems on the questionnaire provided indirect data on a certain aspect of students' insights into translation. On the basis of these data, it can be concluded that *word-level problems* are in the natural translator's focus of attention. With growing age and experience somewhat more attention is given to stylistic problems.

Studying *instrumental sub-competence* is a problematic issue even in small-scale process-oriented research, as it is so multi-faceted and hard to control. The design of our study, that is, providing students with dictionaries, made the variable constant in the sense that subjects did not have the opportunity or the necessity to choose whatever reference material. The know-how and the effectiveness of using dictionaries, however, can only be researched in TA studies. However, the item on the questionnaire asking for additional tools offers some insight into students' awareness of the importance and types of reference materials. The fact that most students could not name any further tools implies a lack of consciousness regarding translation aids. Even the proposed tools are usually not translation-specific. Nevertheless, there are signs of growing awareness in year 11, but these signs are rather sporadic.

Our investigation provided strong evidence for the inclusion of *bilingual sub-competence* in translation competence. Both correlational analyses and regression analyses supported the claim that language competence plays a major role in natural translation competence. *L2 reading* was the factor found to be most closely related to translation performance in grade 7, but reading's role diminished by grade 11. This was explained by the simplicity of the ST: it did not differentiate between older students from the point of view of L2 reading. This is not a problem, as we set out to assess translation competence and not reading competence. Further explanations cannot be given as we had no opportunity to gather information on L1 related skills. Further research in this field would contribute to a great extent to clarifying what factors influence translation performance in more advanced language learners.

In addition, it should be underlined that different types of texts with differing levels of difficulty may call for different configurations of translation competence. As a result, the weight of L1 and L2 related individual skills may vary from situation to situation.

At present, we have no means of studying *extra-linguistic competence* because the issue is simply too complex. The weak to moderate correlations between academic achievement and translation performance in our study may indicate the importance of underlying general knowledge, but as it is not clear what academic achievement in terms of grades reflects, these correlations might as well indicate the impact of an underlying factor, e.g. general intelligence.

Some minor but important findings are related to the category of *psycho-physiological sub-competence*. This is a category, whose elements are seldom studied in translation research, as a result, it seems to have an all-inclusive character: everything is pushed in here that is supposed to have a part in translation but cannot be fitted into other categories. Cognitive and

motivational issues are supposed to belong here, just like personality traits and physiological potential not studied in this research.

As for cognitive components, we found that *inductive reasoning* plays a minor but stable role in translation performance. This was evidenced by both correlational analysis and regression analysis. In addition, the results of regression analysis suggest that inductive reasoning is directly related to translation rather than by simply influencing other factors.

Perception of task difficulty was significantly related to translation performance in grade 7 but not in grade 11. Task difficulty is a factor often studied in motivation research but not in translation studies. Further investigations would be needed to reveal how perceived task difficulty influences the translator both in terms of motivation and in terms of metacognitive awareness devoted to the task. It should be noted here, that motivation in translation is on the whole an underresearched issue that would deserve significantly more attention.

The fact that weak to moderate correlations were detected between *attitudes* and performance support views that translation competence has non-cognitive components. The most important attitudes were the ones related to language learning, and particularly the factor language-learning related self-concept. Regression analysis implied a moderate and consistent effect of language-learning related self-concept on translation performance, which, again, underlines the importance of psycho-physiological factors. It should also be mentioned that some gender differences could be observed in the association between attitudes and performance, which deserve further investigations.

Finally, there were some interesting findings that could not be related to the PACTE model. They are related to factors outside translation competence. A group of these factors concerns external indices of language learning. These variables were found to have inconsistent relationships with translation performance. This is probably linked to the issue of language competence and the effectiveness of language teaching.

Gender and parents' educational qualifications were found to be associated with translation performance; moreover they seem to cause certain variances in performance. Whereas parents' educational qualifications are irrelevant in a professional setting, gender differences could be an interesting problem to investigate with more experienced samples.

We are aware of the fact that findings of our study are of limited value to translation studies as language learners are usually not in the focus of research interest. However, we hope that the design and the findings of the research may serve as an example for further initiatives investigating professional translation competence.

The development of translation competence: results of the process-oriented research

In process-oriented research we used two data collection methods: thinking aloud and peer translation. An objective of our investigation was to compare the two techniques systematically. The other objective was to observe the developmental path of translation competence from language learners to professionals. The following process-related phenomena were investigated in our study:

- temporal aspects;
- reading of the ST prior to translation;
- reading the translation brief prior to translation;
- number of run-throughs;
- use of reference materials.

The sample consisted of eight upper-intermediate language learners, eleven advanced language learners, ten translation students and three professionals. 16 of them translated individually using the TA technique, while 16 subjects worked in pairs. The most important findings are summarized in the following paragraphs.

The traditional division of the translation process into pre-writing, writing and post-writing *phases* is highly questionable from a functional point of view. We do not doubt that splitting up the process into phases has certain technical advantages: it enables us to structure the temporal progression of the translation process and facilitates conceptualizing the process. However, the functional adequacy of the phases was not validated. Functions like orienting, searching, writing, checking, revising seem to be distributed throughout the whole process, although they may be dominant in one phase. The concept of circularity also contradicts the idea of strict translation phases. Evidence against the existence of functional phases included problems with defining boundaries, on the one hand, and the lack of meaningful relations to other aspects of the translation process and to experience or performance, on the other hand.

The theoretical relevance of this finding is that the translation process should be viewed as a functional whole. Splitting it up into phases conceals the fact that the translation process is a unit in itself. This idea is very similar to the one voiced by Sirén and Hakkarainen (2002) who stress the unity of the text and the translation process, but from the point of view of problem solving.

The didactic implication of the finding is that it is irrelevant to instruct students to do certain things before or after writing the first draft. Certainly, there are specific sub-tasks in the translation process that must be fulfilled, but it seems more or less irrelevant in which phase they are done.

5.4.1 The comparison of thinking aloud and peer-translation

One of the most significant findings to emerge from this study is that Thinking Aloud and Pair Translation probably cannot be hypothesized to be equivalent data collection methods. The presence of a partner seems to affect the translation process fundamentally. Indirect evidence supporting this assumption was found in relation to:

- *Performance*: pairs tended to produce better translations;
- *Translation time*: pairs needed less time to complete their translations;
- *Number of run-throughs*: pairs tended to work through the text fewer times than individuals.
- *Use of dictionary*: pairs used the dictionary less often than individuals. Particularly the number of searches for the meaning of unknown words fell drastically.

Key importance can be attributed to the differences in dictionary use, as it is directly related to translational problem solving. Consequently, radical changes in the number of dictionary use suggest fundamental changes in problem-solving strategies. It could be argued that differences in language competence could account for the differences found between the TAP and the PT group. However, protocols suggest that pairs can combine their vocabulary (and perhaps even other language and cognitive skills) and use the advantage of “having two heads”. Similarly, distribution of work may contribute to more efficient (e.g. quicker) work, but it also implies fundamental changes in the translation process as one individual gets involved in only one task (e.g. dictionary use) and the other in another task (e.g. typing).

Taken together, these results confirm previous hypotheses (e.g. Kussmaul and Tirkkonen-Condit, 1995; Jääskeläinen, 2000; Bernardini, 2001) that pair translations provide data on how pairs translate and *not* on individual translators’ cognitive processes. This does not mean that pair translation should be abandoned as a data collection method. It could be well used for detecting advantages of translating in pairs as opposed to working alone and vice versa.

Pair translation seems to be very well suited for educational purposes, too, because the recordings and the numerous smileys in the protocols suggest that pairs worked in a more relaxed and positive atmosphere and learned from each other.

However, because of the small sample size, caution must be applied when generalizing findings. Some of the differences were not significant between the two groups, and even significant differences cannot be presumed to be universal, as the sample is more probably than not, specific. Only research on a larger sample could give more definite answers to the question whether pair translation and TA are interchangeable data collection methods or not.

5.4.2 The development of expertise

The general tendency revealed by our study is that with growing experience translators tend to produce *better translations in less time*. This efficiency, however, is not coupled with a superficial attitude or with absolute automation. The fact that the number of *run-throughs* grew with experience, too, refers to a heightened awareness to control one's own work, which can be regarded as a sign of expertise (Sirén and Hakkarainen, 2002). It may also signal a more global approach (i.e. professionals want to see the target text as a whole) as opposed to spending most of the time solving micro-level problems. Obviously, automation of solving micro-level problems (e.g. lexical problems, see the paragraph on dictionary use below) allows more experienced translators to free capacities for higher-level problems.

In particular, we can observe a heightened sensitivity in (would-be) translators to revise their TTs. They spent more *time* on revising the text in a separate *revision session*. The number of run-throughs related to revising was higher for them, too. Dictionary use in the revision session could only be detected with translation students and experts. Moreover, these searches were mostly directed at finding synonyms, that is, at refining the TT.

More experienced subjects also showed a heightened sensitivity to contextualizing the task at the beginning of the translation process. This was evidenced by their increased willingness to *read the translation brief* prior to translation. In contrast, they were not more inclined to read the ST before starting to translate than language learners. Interestingly enough, these two factors do not seem to be related to actual translation performance.

Marked differences could be observed between sub-groups in *dictionary use*, too. In the main session, the use of reference materials *clearly decreased with expertise*. As the use of dictionaries is an indicator of translation problems, the decrease in use implies less comprehension-related problems and/or the application of other problem-solving strategies. Striking is the decline in the category of searching for the meaning of unknown words in the bilingual dictionary. It indicates *differences in vocabulary size*, an issue seldom touched upon in the literature on translational expertise. The problem may lie in the fact that language competence is taken for granted in translation training, consequently, questions relating to differences in it are not discussed.

Turning to the quality of dictionary use, we found that neither multiple searches nor the number of dictionaries used seem to differentiate between subjects with different levels of experience. This does not mean that the factors mentioned above are irrelevant from the aspect of expertise. The source text and the reference materials provided may be responsible for hiding the differences between experience groups.

As regards aims of dictionary use, regular patterns were difficult to find: TT related aims were most prevalent in the case of translation students. We hypothesized that they needed printed help to solve certain problems. Professionals seldom used dictionaries in the first session to find synonyms, which we interpreted as a sign of using other strategies to solve TT-related problems.

Inconsistencies with previous findings (e.g. Krings, 1986b, 1988, Gerloff, 1988, Jääskeläinen, 1999, Sirén and Hakkarainen, 2002) may be explained by diverging research conditions: the

task in our study must have had a routine character for the professionals, thus, classic features of expert behaviour could be elicited. Previous findings and our results complement rather than contradict each other. Our study proved that certain elements in the translation process do work smoothly for professionals. This nearly effortless and elegant work enables the expert translator to concentrate on more problematic elements in more difficult contexts. He or she has simply more free capacities to tackle challenging problems than less experienced translators. It can be assumed that previous research concentrated on difficult or more specific texts with more challenging problems and this resulted in the observed differences in research results.

5.5 The significance of the outcomes of our research

Our results are probably most useful for translator training. Both the quantitative and qualitative study indicated that there is a strong bond between language competence and translation competence. This suggests that language competence and linguistic issues should not be neglected in training.

Process data showed that translation performance increased, and at the same time, translation time decreased as a function of expertise. This finding can be utilized in the “translation market” in defence of professionals.

Other process-related results may assist professors in telling lay and professional behaviour apart but they are not necessarily helpful in telling what students should do to become experts. Nevertheless, some suggestions can be made for training (e.g. on “framing” the task or use of reference materials).

The methodological findings of the study are of great significance. Evaluating translations can be done reliably provided two raters are applied and descriptors are made available. Evaluation techniques and statistical analysis employed in our study could be carried out in several other contexts.

As far as we know, this has been the only study that examined the differences between TA and PT as data collection techniques systematically. The differences we found indicate that the two methods are not interchangeable.

Finally, we would like to refer to a personal observation: both TA and PT seem to be useful training techniques. Both the recordings and the interviews suggested that some subjects profited from the task. The researcher, who transcribed the recordings learnt very much about the subjects’ translation competence as well. Recording short TAs and PTs could be a good exercise in translation training – and listening to them a valuable experience for the professors.

One of the most important outcomes of our research is that it raised several new questions that can lead to further research. These will be described in the next section.

5.6 Suggestions for further research

The large-scale investigation brought evidence that *statistical methods* can be applied to translation research. It would be of great value for translator training if similar methods were used to study relatively large groups of *professional* translators.

Evaluation methods proved to be more reliable than expected. Nevertheless, further investigations are needed to establish an array of verified assessment and evaluation methods that can be used for both educational and research purposes.

As there is good reason to suppose that translation competence can be text-type-specific, it would be very important to study the translation of different types of texts on the same sample. Both quantitative and qualitative studies could provide insight into an underresearched issue.

Error-typologies and problem-typologies are a promising field of research, too. Factor-analysis was found to be a useful tool in grouping translation problems in positive evaluation. The procedure should be replicated in other samples and with other (types of) texts to get more information on translation problems.

Factor-analysis could be carried out *on errors* identified in translations. This way, errors could be grouped statistically, too. With the help of this method, we could observe whether theoretical error-categories coincide with empirical ones.

With reliable and valid evaluation methods it would be possible and necessary to explore *background factors* related to translation on *large professional samples*. Our study indicated the importance of some factors (e.g. SL reading, inductive reasoning). Not only these should be verified on another sample but other background factors like TL writing, metacognition, attitudes to translation or previous knowledge of the subject matter should be studied. Results concerning these issues would provide considerable help to translation teaching.

In our conclusion of the process-oriented research we have already suggested ideas for further analysis of the existing data. They can be summarized as follows:

- Processing information found in reference materials
- Analysis of lexical items searched
- Translation problems and strategies
- Metacognition in the translation process
- Decision making in translation
- The relation of translation errors in the product and conscious problem-solving efforts in the process
- Evaluative statements
- Gender differences
- Conversational analysis of pair translations – the relation of cooperation to translation performance
- The comparison of TA and PT along several factors

However, there are several questions could only be studied within the framework of another process-oriented study. Typically, we could not explain within-group differences in our investigation because of the small sample size. Especially the question, *what process-variables contribute to performance differences between professionals* deserves attention. A research with a comparatively large number of professionals could shed light on these factors. An intriguing question is whether there are differences in language competence between professionals, and whether these exert any influence on translation performance.

Another issue is related to the translator's familiarity with the form and the content of the text he/she works with in the research project. Specifically, it would be interesting to find out how professionals handle routine and non-routine tasks. This would answer the question whether the category "sub-professional" is meaningful in translation.

The use of TA and PT raise the question whether these methods enhance performance in some way, at least in certain experience groups. In the case of TA, metacognitive processes can be induced by talking aloud, and pair translation may lead to social facilitation. Both may improve performance but whether this is really the case, should be examined systematically.

Finally, as the use of computers became an everyday reality for translators, research on how translation memory and other ICT (information-communications technology) devices influence professional translation processes and products would be highly needed.

6. TANULMÁNYOK A FORDÍTÓI KOMPETENCIA KÖRÉBŐL

Az értekezés magyar nyelvű összefoglalója

6.1 Az értekezés témája, kutatási feladata és szerkezete

6.1.1 A témaválasztás indoklása

Bár a fordítás évszázadok óta irodalmárok, filozófusok és esszéisták kedvelt témája, tudományos jellegű vizsgálata csak a 20. század közepén kezdődött meg (Klaudy, 1997). A fordítástudományon belül is fiatal kutatási irányzat a fordítás pszicholingvisztikai aspektusának vizsgálata. A fordító mentális folyamatai iránti érdeklődés csak az 1970-es években jelentkezett, majd a 80-90-es években nőtt meg ugrásszerűen. Ennek több oka lehetséges: egyrészt a fordítóképzés intézményesült, és elfogadást nyert a legtöbb fejlett ország felsőoktatási rendszerében. Ebből eredően megnőtt a „kereslet” a fordítói kompetencia mibenlétére, összetevőire és fejlődésére vonatkozó információk iránt. Másrészt az ekkor felfelé ívelő kognitív pszichológia megfelelő elméleti és módszertani háttérrel tudott nyújtani bizonyos jelenségek modellezéséhez, magyarázatához és empirikus vizsgálatához. Mindezzel együtt a fordítói kompetencia vizsgálatát a mai napig az empirikus kutatások szerény száma jellemzi – különösen Magyarországon.

Ezt a hiányt némiképp pótlandó, kutatásunkban nyelvtanulók, angol szakos egyetemi hallgatók, fordítóképzősök és hivatásos fordítók fordítói kompetenciájáról gyűjtöttünk adatokat. Az adatok segítségével a fordítói kompetencia összetevőiről, jellegzetességeiről és alakulásáról szeretnénk volna képet kapni. Ennek érdekében eredmény- és folyamatorientált vizsgálatokat is végeztünk, kis és nagy mintán egyaránt.

A kutatás eredményei elsősorban a fordítóképzésben hasznosíthatók, azáltal, hogy magáról a fejlesztendő kompetenciáról nyújtanak információkat, illetve olyan háttérváltozókra világítanak rá, amelyek a fordítói kompetencia fejlődését segítik.

6.1.2. A kutatás céljai

A kutatás fő céljához kapcsolódóan több kisebb részelt tudunk megállapítani. Ezek a következők voltak:

- *A fordítói kompetencia modellekhez és a fordítói kompetencia értékeléséhez kapcsolódó szakirodalom áttekintése és kritikai elemzése:* bár a szakirodalom áttekintése minden kutatás szerves része, esetünkben az elemzések a terület kiforratlansága miatt hiánypótló szerepet töltenek be.
- *A természetes fordítói kompetencia vizsgálata:* megjelenése, jellegzetességei és fejlődése
- *Néhány fordításértékelési eljárás kidolgozása és tesztelése*
- *Laikusok és hivatásos fordítók fordítási folyamatainak összehasonlítása:* ezáltal fejlődési útvonalak és jellegzetességek feltérképezése.
- *A hangos gondolkodás és a páros fordítás mint adatgyűjtési technikák kutatómódszertani összehasonlítása.*

1.3. Az értekezés szerkezete

A fordítás néhány definíciójának bemutatása után a 2. részben a kutatás elméleti háttérét ismertettük. Ezen belül felvázoltuk a fordításelméleti alapokat és a legfontosabb fordítói kompetencia modelleket, valamint áttekintettük a fordítás értékelése során alkalmazott leggyakoribb technikákat és a fordítás folyamatorientált kutatásának módszereit és eredményeit.

A 3. részben nagymintás mérésünk eredményeit ismertettük. Kisebb próbamérés után 501 nyelvtanuló fordítói teljesítményét értékeltük, és statisztikai összefüggéseket kerestünk a teljesítmény és egyéb háttérváltozók (pl. forrásnyelvi készségek, induktív gondolkodás, iskolával és nyelvtanulással kapcsolatos attitűdök, szülők iskolai végzettsége, nem) között. Emellett fordításértékelési eljárások néhány pszichometriai mutatójának elemzésére is sor került.

A 4. részben a kismintás, folyamatorientált vizsgálat eredményeit mutattuk be. Rávilágítottunk, hogyan változnak a folyamat egyes változói a tapasztalat függvényében, másrészt módszeresen összehasonlítottuk a hangos gondolkodás és a páros fordítás technikáját.

Az 5. részben a kutatás eredményeit foglaltuk össze, és további lehetséges kutatási irányokat vázoltunk fel.

6.2 Az elméleti háttér

A fordításról való gondolkodás és a fordítás kutatásának egyik legnagyobb problémáját az okozza, hogy a fordítás fogalma korántsem egyértelmű: sokan sokféleképp használják a szót (Heltai, 1996). Értekezésünk elején öt fogalmat tekintettünk át, végül a fordítást *kommunikatív tevékenységként* értelmeztük, melynek során a fordító két nyelv és két kultúra között közvetít.

A *fordításelméleteket* két nagy csoportba sorolva mutattuk be: A *nyelvészeti modellek* a fordítást a jelek szintjén értelmezik, és általában nem vetnek számot a kommunikáció kontextusával, céljával, funkciójával vagy a fordító mentális folyamataival (Klaudy, 1997; Stolze, 1994; Fawcett, 1997). A *funkcionalista fordításelméletek* a fordítást az emberi interakciók és a kommunikáció egy speciális formájának tekintik. Ennek megfelelően nem a nyelvi jelek, hanem az interakció célja kerül elméletük középpontjába (Klaudy, 1997; Stolze, 1994; Nord, 1997b). Mivel véleményünk szerint sem a fordítás nyelvi elemei, sem pedig kommunikatív kontextusa nem elhanyagolható, kutatásunk során mindkét irányzatra építettünk. A funkcionalizmus elvei irányították a szövegválasztást és a fordítás értékelésének átfogó elveit mindkét vizsgálat során. Funkcionalista forrásból származik a fordítói utasítás gondolata, a pozitív értékelés ötlete és Nord hibatipológiája is (1997b). A nyelvészeti irányultságú elméletek befolyásolták a fordítói kompetencia modell kiválasztását is: a vizsgálat alapjául olyan modellt választottunk, amely magában foglalta a nyelvi kompetenciát is. A szövegválasztás során szövegnyelvészeti ismeretekre és tipológiákra is támaszkodtunk, a fordítási hibák pedig természetesen a nyelvhez kötődtek.

A *fordítói kompetencia modellek* áttekintése során azt találtuk, hogy a legtöbb modell a *specializálódott kompetenciák* körébe sorolható, bár találtunk példákat a kompetencia-performancia modellre, a „szubjektív kompetenciamodellre” és az akció-orientált modellekre is. Arra is rávilágítottunk, hogy a metakompetenciák és a kulcskompetenciák feltehetőleg fontos szerepet játszanak a fordítói kompetencia működésében.

A modellek áttekintése után megállapítottuk, hogy önmagában véve egyik modell sem értékesebb a másiknál. Mindig a mindenkori kutatás vagy képzés jellege és céljai határozzák meg, melyik felfogásra érdemes építeni. Vizsgálatunk keretében a PACTE kutatócsoport holisztikus modelljét választottuk (PACTE, 2000, 2002, 2003, 2005). A modell előnyei közé tartozik elméleti és gyakorlati megalapozottsága, átfogó jellege és operacionalizálhatósága. A modell szerint a fordítói kompetencia a következő komponensekből áll:

- Stratégiai alkompetencia
- Fordításelméleti ismeretek alkompetenciája

- Instrumentális alkompetencia (eszközhasználat)
- Nyelvi kompetenciák (mindkét nyelven)
- Nyelven kívüli ismeretek
- Pszicho-fiziológiai alkompetencia

A következő fejezetben a *fordítói kompetencia értékeléséről* adunk helyzetképet. Elméleti és empirikus kutatások alapján összegyűjtöttük a leggyakrabban alkalmazott feladattípusokat, áttekintettük a szövegválasztás kritériumait és a hozzá kapcsolódó problémákat. Több, a célnyelvi szöveg értékelését célzó eljárást is bemutatunk: a holisztikus értékelést, a hibaelemzést és a pozitív értékelést.

Holisztikus értékelés esetén egy vagy több bíráló meghatározott szempontok alapján szubjektív benyomásaira támaszkodva értékeli a fordítást valamilyen számszerű skálán.

A *hibaelemzés* a hibák pontos megjelölését és kategóriákba sorolását, esetleg súlyozását jelenti. Ehhez kapcsolódóan több hibatipológiát is bemutatunk.

Pozitív értékelés esetén a forrásnyelvi szövegben adott számú és típusú fordítási problémát határozunk meg, majd megvizsgáljuk, hogy a fordító megoldotta-e ezeket a problémákat. A szöveghez készített fordítási probléma-lista gyakorlatilag tesztként funkcionál, a fordítási problémák pedig itemekként működnek, értékelésük tehát 1-0 (megoldotta – nem oldotta meg) alapon történik. Ez lehetővé teszi az eredmények kvantifikálását, másrészt – jól meghatározott problémakategóriák esetén – képet adnak a fordítói kompetencia jellegéről, tehát arról, hogy milyen típusú problémákat tud megoldani a fordító. A fordítási problémák legismertebb osztályozása Nord (1997b) nevéhez fűződik, mi is ezt a tipológiát használtuk vizsgálatunkban.

Kutatásunkban mindhárom értékelési technikát teszteltük, és megpróbáltunk rávilágítani előnyeikre és hátrányaikra, valamint alkalmazhatóságuk lehetőségeire és korlátaira.

Az elméleti háttérrel bemutatkozó rész utolsó fejezetében a „verbális protokollok” módszerét és a fordítástudomány folyamatorientált kutatásait mutattuk be. Ericssonra és Simonra (1999) támaszkodva ismertettük a hangos gondolkodás technikáját, melynek segítségével az emberi információfeldolgozó folyamatokba nyerhetünk betekintést. Megvizsgáltuk a hangos gondolkodás korlátait, és áttekintettük a jegyzőkönyvek feldolgozásának módszereit. Megállapítottuk, hogy a hangos gondolkodás akkor tekinthető megbízható eljárásnak, ha az adatgyűjtésre és -elemzésre vonatkozó előírásokat követjük, továbbá szem előtt tartjuk és egyértelművé tesszük a módszer és a hozzá kapcsolódó eredmények viszonylag szűkebb érvényességi körét.

A fordítástudomány folyamatorientált kutatásaira sok esetben kutatásmódszertani szempontból felületesség jellemző, ami alatt azt értjük, hogy az adatok értelmezése a kutató intuitív megérzései alapján, és nem szegmensek (akár számszerű) elemzése alapján történik. Ugyanakkor számos igényes vizsgálattal is találkozunk, ezek áttekintése azonban igen nagy feladat, mert a kutatások céljaik, a vizsgált változók, az alanyok, a fordításfelfogásuk és a feldolgozási eljárások tekintetében is igen nagy változatosságot mutatnak. Emiatt a sokszor egymásnak ellentmondó eredmények összehasonlítása vagy szintetizálása nem lehetséges. Mindemellett bizonyos visszatérő témák és eredmények alapján megfogalmazhatunk néhány feltételezést a fordítási folyamatra vonatkozóan. Ezek a következők:

- „Az ideális fordítási folyamat” keresésére irányuló törekvések ez ideig hiábavalónak bizonyultak. A fordítás pszicholingvisztikai folyamata nem írható le egyszerűen és egységesen. Az olyan tényezők, mint a szöveg nehézsége, a szöveg típusának és műfajának ismerete a fordító részéről, a rendelkezésre álló segédeszközök mennyisége és minősége vagy a fordítás iránya befolyásolhatják, hogy a fordítás során a fordító milyen utat jár be. A

megelőző kutatások jelentős egyéni különbségeket is találtak, amelyek azonban nem kapcsolódtak kompetencia- vagy teljesítménybeli különbségekhez.

- Ugyanakkor bizonyos diszfunkcionális stratégiák megjelenésére több kutató is felfigyelt (Krings, 1986; Lörcher, 1991b, Jääskeläinen, 1999). Ilyen például a „megértés nélküli fordítás”, a jelorientált fordítás vagy a kis fordítási egységek középpontba állítása. Ezek a stratégiák rendszerint nem segítik a kommunikációt, nehézségek esetén azonban kezdők és szakértők is gyakran folyamodnak ilyen taktikákhoz, bár kezdők általában gyakrabban.
- A szakértők fordítási folyamatai sem tekinthető egységesnek. A vizsgálatok szerint hivatásos fordítók is számos, sokszor eltérő globális és lokális stratégiát használnak munkájuk során.
- Bár a hivatásos fordítók csoportja is roppant heterogén, mégis jól elkülöníthető olyan laikus csoportoktól, mint a nyelvtanulók vagy a kétnyelvűek. E csoportok közötti különbségek a „gyorsan lehívható szópár-tár”, a fordítás gyorsasága, a fordítási stratégiák és a fordítás egysége terén jelentkeztek, bár az eredmények néha nem egyértelműek.
- Bizonyos körülmények között (pl. nem rutin jellegű feladatok megoldása vagy nehéz szövegek fordítása esetén) a szakértők az újoncokhoz hasonló stratégiákat alkalmazhatnak. Az eddigi vizsgálatokból nem derül ki, hogy a szakértők ezeket a stratégiákat nagyobb sikerrel alkalmazzák-e, mint a kezdők.

Más kérdések terén azonban egymásnak ellentmondó kutatási eredményekkel találkozhatunk:

- Nem egészen világos, *hogyan* változik a fordításra szánt idő a tapasztalat függvényében. A kezdők és a szakértők időfelhasználása ugyan minden kutatásban eltéréseket mutat, de az eltérések mintázata sokszor ellentétes irányú (pl. Krings, 1988; Jääskeläinen, 1999, Ronowicz et al., 2005, Dragsted, 2005)
- Nem egyértelmű az sem, hogy a tapasztalat hogyan befolyásolja a szövegben fordítási problémaként kezelt szegmensek számát (pl. Krings, 1988 és Jääskeläinen, 1999 szemben Jensennel, 1999).
- A szótári keresések számának változása terén sem egyértelműek a tendenciák (Jääskeläinen, 1999 vs. Ronowicz et al., 2005)
- Ellentmondásosak az eredmények arra vonatkozóan, hogy változik-e a tapasztalat függvényében a fordítási utasításhoz való attitűd és annak betartása (Krings, 1986 v. Jääskeläinen, 1999)

Ugyanakkor a fordítási folyamat olyan összetett, hogy jelenleg a rendelkezésre álló kutatómódszertani eszközökkel kevés esélyt látunk arra, hogy biztos válaszokat tudjunk adni ezekre a kérdésekre. A folyamatorientált kutatások egyik nagy haszna, hogy rávilágítottak erre a komplexitásra, és bizonyos értelemben az „ideális folyamat” mítoszát kérdőjelezték meg, elősegítve ezzel azt, hogy kifinomultabban gondolkodjunk a fordítás pszicholingvisztikai aspektusairól.

A fordítástudományban a hangos gondolkodás technikáját kezdetektől fenntartásokkal kezelte néhány kutató (House, 1988, Matrat, 1992), és alternatív adatgyűjtési technikaként a páros fordítások módszerét javasolták. A két eljárás szisztematikus összehasonlítására azonban még nem került sor. Ezért úgy döntöttünk, vizsgálatunkban a páros fordítás és a hangos gondolkodás technikáját is alkalmazzuk, hogy rávilágítsunk a két eljárás esetleges különbségeire.

6.3 A természetes fordítói kompetencia vizsgálata

Első empirikus kutatásunk a természetes fordítói kompetenciát vizsgálta nyelvtanulók körében. A kutatás céljai a következők voltak:

- A természetes fordítói kompetencia spontán megjelenésének igazolása.
- Annak bizonyítása, hogy a természetes fordítói kompetencia fejlődése a nyelvi-kommunikációs kompetencia fejlődésével van összefüggésben.
- Olyan háttérváltozók felkutatása, amelyek befolyásolják a természetes fordítói kompetencia fejlődését és működését.
- A fordítói kompetencia mérésére érvényes és megbízható eszközök kidolgozása.

A mérés mintáját az SZTE MTA Képességkutató Csoport Idegen Nyelvi Felmérésének egy részmintája képezte¹¹. A vizsgálatban 273 hetedik osztályos és 227 tizenegyedik osztályos tanuló vett részt, akik az iskolai oktatás keretei között angolt tanultak. Az adatfelvétel során a következő mérőeszközöket használtuk:

A) Az idegen nyelvi mérés eszközei

- Kommunikatív nyelvi tesztek angol nyelven (írás- és olvasáskészség, hallott szöveg értése)
- Induktív gondolkodást mérő teszt
- Iskolával és nyelvtanulással kapcsolatos attitűdöket mérő kérdőívek

B) A fordítói kompetencia értékeléséhez kapcsolódó eszközök

- Fordítás: rövid szöveg fordítása angolról magyarra szótár segítségével. A feladathoz fordítási utasítást mellékelünk.
- Kérdőív a fordítási feladatra és néhány háttérváltozóra vonatkozóan (pl. feladatészlelés, segédeszközök használata, a nyelvtanulás néhány mennyiségi mutatója)

Próbamérés után az adatfelvételre 2003 áprilisában került sor. Legfontosabb eredményeinket három pontban mutatjuk be.

6.3.1 A fordítói kompetencia értékelésének eljárásai

A vizsgálat során három értékelési eljárást próbáltunk ki. A próbamérés során a fordításokat egy, a nagymintás mérés során két értékelő értékelt.

A *hibaelemzést* csak a próbamérés során alkalmaztuk, mert már ebben a fázisban előrejelezhető volt gazdaságtalansága. Ez alatt azt értjük, hogy idő-, energia- és anyagi befektetés szempontjából több száz dolgozat javítása két értékelővel meglehetősen költséges, a nyereség pedig viszonylag kicsi. Bár a hibaelemzés bizonyos esetekben részletes képet ad arról, hogy mi *nem* része a fordító kompetenciájának, nem feltétlen tükrözi, hogy mit tud a fordító. További problémát jelentett a hibaelemzés viszonylagos függetlensége a többi értékelési eljárástól, a célnyelvi hibák felülreprezentáltsága, és a le nem fordított szövegrészek kérdése. A hibaelemzés egyik legnagyobb hiányossága, hogy nem tudja kezelni a le nem fordított szegmenseket, ezáltal erősen torzítja az adatokat.

Mindezzel együtt nem állíthatjuk, hogy a hibaelemzés mint módszer önmagában véve használhatatlan. Sokkal inkább arról van szó, hogy a nagymintás mérés céljainak nem felelt meg. Formatív értékelés során, kisebb minta esetén, esetleg másképp definiált hibakategóriákkal hasznos értékelési technika lehet.

A *pozitív értékelési* eljárás kipróbálása ellentmondásos eredményeket hozott. Először is, nagyon nagy kihívásnak bizonyult olyan tesztet szerkeszteni, amelynek validitása és

¹¹ Köszönettel tartozom Csapó Benőnek és Nikolov Marianne-nak, akik hozzájárulása és segítségével a kutatás nem valósulhatott volna meg.

reliabilitása is megfelelő volt. A reliabilitás növelését célzó lépések ugyanis azt eredményezték, hogy az eredetileg szakértők által meghatározott probléma-sorban aránytalanul megnőtt a szó-szintű problémák mennyisége, ez pedig a validitást rontotta, hiszen fordításfelfogásunknak ellentmond, hogy akár a fordítói kompetenciát, akár egy szöveg fordításának minőségét egyes szavak fordításának sikere alapján ítéljük meg. Meglepetésül szolgált azonban, hogy a szó-szintű problémák dominanciáját mutató teszt erősen korrelált a holisztikus értékelés eredményeivel.

A mondat-szintű problémák az értékelők számára is nehézségeket okoztak: ezeken az itemeken alacsonyabbnak bizonyult az értékelők közötti egyezés, mint más problémák esetén. Ez viszont arra utal, hogy objektivitásra való törekvésünk ellenére sem használható a pozitív értékelés két értékelő alkalmazása nélkül.

A pozitív értékelés előnyei közé tartozik, hogy – amennyiben sikerül elfogadható validitású és reliabilitású tesztet készíteni – a javítás viszonylag gyors és könnyű, az eredmények számszerűsíthetők, és ez lehetőséget teremt a statisztikai elemzés számára. A jól összeállított tesztek képet adhatnak arról, milyen problémákat tud a fordító megoldani.

A fordítási problémák meghatározásához Nord (1997b) tipológiáját használtuk, amely pusztán fordításelméleti feltételezéseken alapul. Felmerült a kérdés, hogy az empirikus adatok igazolják-e ezeknek a probléma-típusoknak a létét. Nord kategóriái a következők voltak: pragmatikai, interkulturális, nyelvi (nyelv-pár specifikus) és szöveg-specifikus problémák. A problémák csoportosítása érdekében az „teszt-eredményeken” faktoranalízist végeztünk, amely nem támasztotta alá a nordi kategóriákat. A problémák legnagyobb része két faktorba tömörült, és mindkettő nyelvi jellegűnek bizonyult: az első faktorba azok a problémák tartoztak, amelyek kreatív megoldást, a másodikba pedig azok, amelyek konvencionálisabb megoldást igényeltek. Ettől függetlenül persze Nord kategóriái fordításelméleti szempontból érvényesek maradnak, az viszont kérdéses, hogy ugyanezeknek a kategóriáknak van-e pszicholingvisztikai realitása.

A holisztikus értékelés jól használható eljárásnak bizonyult a nagymintás mérés során. Stansfield és munkatársai megelőző kutatására támaszkodva a fordításokat három dimenzió - az összhatás, az információközvetítés és a célnyelvi megfogalmazás minősége - szempontjából értékeltük. A validitást deskriptorok segítségével biztosítottuk. A reliabilitást az értékelők közötti egyezés mértéke mutatja, ami kifejezetten jónak mondható. Ez egyértelműen ellentmond annak a közhiedelemnek, miszerint a fordítás – szubjektív jellege miatt – nem vagy csak nehezen lenne értékelhető.

A holisztikus értékelés hátránya, hogy nem mutat részletes képet a fordítói kompetenciáról, ugyanakkor nagy minták esetén kiválóan alkalmas a fejlődési tendenciák kimutatására. A holisztikus értékelés által kapott eredmények jól értelmezhetők önmagukban és más változókkal való kapcsolatukban is.

6.3.2 A természetes fordítói kompetencia és fejlődése

Eredményeink alapján arra következtethetünk, hogy a fordítói kompetencia spontán jelenik meg, amint a második nyelv formálódni kezd a nyelvtanulóban. A fordítási feladaton nyújtott teljesítmény azonban azt mutatta, hogy a természetes fordítói kompetencia meglehetősen kezdetleges formában van jelen a hetedik évfolyamon, pedig a forrásnyelvi szöveg nem volt különösebben nehéz. A hetedik és a tizenegyedik évfolyam között óriási, nyilván spontán fejlődés zajlik le, hiszen nem valószínű, hogy ebben a korosztályban a fordítói kompetencia fejlesztésére koncentrálnának a pedagógusok. Adataink alapján nem tudjuk megmondani, hogy milyen arányban járul hozzá a fejlődéshez az idegen nyelvi és anyanyelvi készségek fejlődése, a világtudás növekedése vagy éppen a fordítás terén szerzett esetleges tapasztalatok.

Eredményeink arra utalnak, hogy az információközvetítés dimenziója fejlettségben mindkét korosztályban megelőzi a célnyelvi megfogalmazás dimenzióját. Feltételezhetjük, hogy a fordítói kompetencia egyik jellegzetessége a pontos információközvetítésre törekvés a forma viszonylagos figyelmen kívül hagyásával. Ezt a hipotézist azonban további kutatások során ellenőrizni kell.

6.3.3 A természetes fordítói kompetencia komponensei és a működését meghatározó néhány háttérváltozó

A fordítói kompetencia komponenseire vonatkozó eredményeket a PACTE-modellre támaszkodva mutatjuk be.

Kutatásunk egyik legfontosabb eredménye, hogy a *nyelvi kompetencia* és a fordítói kompetencia szoros összefüggését tudtuk igazolni nyelvtanulók esetében. A korrelációs vizsgálatok és a regresszióanalízisek is azt igazolták, hogy a nyelvi kompetencia fontos szerepet játszik a természetes fordítói kompetencia működésében. A hetedik évfolyamon a forrásnyelvi (második nyelvi) olvasáskészség mutatta a legerősebb, pozitív irányú összefüggést a fordítói teljesítménnyel, 11 évfolyamra azonban már csökkent az olvasás szerepe. Ezt a forrásnyelvi szöveg egyszerűsége magyarázhatja: a szöveg feltehetőleg nem differenciált az idősebb korosztályban olvasás szempontjából. Ezt nem tekintjük problémának, mivel nem az olvasási készségeket vizsgáltuk. Sajnos azonban nem volt lehetőségünk adatokat gyűjteni a célnyelvi (anyanyelvi) kompetenciákról, így nem tudjuk, hogy vajon azok milyen súllyal szerepelnek a fordító kompetenciájában, illetve ez hogyan változik a nyelvtudás növekedésével. Ennek tisztázása fontos kutatási feladat lenne, csakúgy mint az, hogy vajon a nyelvi kompetenciák ugyanilyen erőteljesen befolyásolják-e a hivatásos fordítók teljesítményét.

Hozzátesszük, hogy a különböző típusú és nehézségű szövegek feltehetőleg más-más fordítói kompetencia konfigurációt igényelnek: azaz különböző mértékben veszik igénybe a forrásnyelvi és célnyelvi készségeket, hol az egyik, hol pedig a másik számára állítva nagyobb kihívásokat. Ennek megfelelően a nyelvi készségek súlya a fordítói teljesítményben szövegről szövegre is változhat, ezért nagyon fontos lenne hasonló típusú vizsgálatokat többféle szöveggel is elvégezni.

Néhány fontos eredménnyel tudtuk gazdagítani a *pszicho-fiziológiai alkompetenciákról* való ismereteinket is. Ez a komponens erőteljes gyűjtőjelleggel rendelkezik: kognitív és motivációs tényezőket ugyanígy idesorolnak, mint személyiségvonásokat vagy fiziológiai folyamatokat.

A kognitív összetevők tekintetében azt találtuk, hogy az *induktív gondolkodás* fejlettsége kicsiny, de stabil háttértényezőként meghatározza a fordítási teljesítményt. Ezt igazolták a korrelációelemzések és a regresszióanalízis is. A regresszióanalízis eredménye arra is bizonyíték, hogy az induktív gondolkodás közvetlenül a fordítást befolyásolja, és nem valamely más alkompetencián vagy más kognitív készségen keresztül fejt ki hatását.

A *feladat nehézségének megítélése* szignifikáns összefüggést mutatott a teljesítménnyel a 7. évfolyamon, ez az összefüggés azonban eltűnt az idősebb korosztályban. A fiatalabbak esetén minél könnyebbnek ítélte valaki a feladatot, annál jobban teljesített. Az idősebb korosztály esetén nem volt ennyire egyértelmű a kép.

A feladat nehézségének megítélését gyakran vizsgálják motivációs kutatásokban, a fordítással kapcsolatosan azonban nem ismerünk ilyen vizsgálatokat. További kutatásokra lenne szükség, hogy megállapítsuk, hogyan befolyásolja a feladat nehézsége egyrészt a fordítók motiváltságát, másrészt a feladatmegoldás során mozgósított metakogníciót. Mindkét tényező hatást gyakorolhat magára a fordítási teljesítményre.

Az *attitűdök* és a fordítási teljesítmény között talált gyenge és közepes korrelációk azt támasztják alá, hogy a fordítói kompetencia nem kognitív összetevőkkel is rendelkezik. Kiemelkedő jelentőségűnek bizonyultak a nyelvtanuláshoz kapcsolódó attitűdök, ezek közül is elsősorban a *nyelvtanulásra vonatkozó énkép*. A regresszióanalízis a nyelvtanulásra vonatkozó énkép következetesen megnyilvánuló, bár gyenge-közepes erősségű hatását mutatta. Vagyis minél sikeresebb és tehetségesebb nyelvtanulónak ítélte meg magát valaki, annál nagyobb valószínűséggel ért el jobb teljesítményt a fordítási feladaton. Ennek alapján fontosnak tartanánk megvizsgálni, hogy maga a *fordítói énkép* milyen hatással van a teljesítményre.

A *stratégiai alkompetenciát* jellegénél fogva folyamatorientált kutatással lehet vizsgálni, ezért jelen mérésünk szempontjából nem volt releváns.

Nem vizsgáltuk közvetlenül a „*fordításelméleti ismeretek*” és az „*eszközhasználat*” alkompetenciákat sem, ugyanakkor néhány eredményből következtetéseket vonhattunk le ezekre.

A fordítási feladathoz mellékelte kérdőívben a tanulóknak jelezniük kellett, mi okozott számukra problémát a fordítás során. A kérdésekre adott válaszok alapján arra következtethetünk, hogy a természetes fordítók figyelmének középpontjában a *szó-szintű* problémák állnak. Ugyanakkor az idősebb korosztály már némiképp több figyelmet szentel a célnyelvi szöveg *stílusának*, mint a fiatalabbak. Ezek az eredmények, ha nem is „fordításelméleti ismereteket, de „naiv fordításelméleteket” tükrözhetnek.

A szótárhasználat technikáját és eredményességét szintén csak folyamatorientált kutatással mérhetjük fel. A kérdőívben ugyanakkor arra kértük a diákokat, hogy nevezzenek meg egyéb eszközöket, amelyek a fordítást segíthetik. A válaszok betekintést nyújthattak abba, hogy a diákok milyen eszközöket ismernek, és mennyire vannak tisztában ezek jelentőségével. A nyílt kérdésre meglehetősen kevesen válaszoltak, ami az ilyen jellegű tájékozottság alacsony szintjét jelzi. A 11. évfolyamon született néhány válasz, amely meglepő tudatosságra utal (pl. párhuzamos szövegek, szinonima- és helyesírási szótárak), ezek azonban elenyésző számban jelentek csak meg.

A *nyelven kívüli ismeretek* alkompetenciájának tanulmányozására jelenleg nem ismerünk eszközöket, mert túlságosan összetett ez a komponens. A fordítási teljesítmény és az iskolai eredményesség között kimutatható gyenge és közepes erősségű korrelációk utalhatnak a háttérben meghúzódó széleskörű ismeretek fontosságára. Mivel azonban a pedagógia tudományán belül sem egészen tisztázott, hogy az osztályzatok valójában mit fejeznek ki, nem zárhatjuk ki, hogy valamely háttértényező (pl. általános értelmesség) határozza meg a fordítói és a tanulmányi eredményességet is.

Kutatásunkban vizsgáltuk néhány olyan háttérváltozó hatását is, amelyek nem illeszthetők a fordítói kompetencia modelljébe. Ezek közül nem hoztak egyértelmű eredményeket a nyelvtanulás objektív mutatóira (a nyelvtanulás időtartama, heti óraszám, stb.) vonatkozó vizsgálódások. Az összefüggések csekély volta, illetve bizonyos esetekben hiánya feltételezhetően a nyelvtanítás eredményességével hozható összefüggésbe.

Szignifikáns korrelációkat találtunk viszont a nemek és a fordítási teljesítmény, valamint a szülők iskolai végzettsége és a teljesítmény között. A regresszióanalízis eredményei alapján ezek a változók felelősek is valamilyen mértékben a teljesítmény alakulásáért. Bár a szülők iskolai végzettségének hatása irreleváns lehet később a professzionális fordítás szemszögéből, érdekes kérdés, hogy vajon a természetes fordítók között stabilan megnyilvánuló előnyök a lányok javára fennmaradnak-e a hivatásos fordítók között is.

Ismételten szeretnénk hangsúlyozni, hogy eredményeink a természetes fordítói kompetenciára vonatkoznak. Ezek kiválóan alkalmasak lehetnek arra, hogy képet alkossunk a fordítóképzésbe lépő hallgatók kompetenciájának jellegéről, összetevőiről és fontos elemeiről. A szakértők kompetenciájára azonban csak következtethetünk ezekből az eredményekből, illetve hipotéziseket állíthatunk fel ezek alapján. Reméljük azonban, hogy kutatásunk eszközöket és ötleteket kínál a hivatásos fordítók kompetenciájának hasonló típusú vizsgálatához.

6.4 A fordítói kompetencia fejlődésének vizsgálata folyamatorientált eszközökkel

Folyamatorientált kutatásunkban két adatgyűjtési technikát használtunk, a hangos gondolkodás és a páros fordítás módszerét. Vizsgálatunk egyik célja a két eljárás összehasonlítása volt. A másik cél a fordítói kompetencia fejlődési útvonalának vázlatos felrajzolása volt.

Ennek megfelelően a minta nyolc középhasadó nyelvtanulóból (középiskolások), tizenegy haladó nyelvtanulóból (angol szakos egyetemi hallgatók), tíz fordítóképzésben résztvevő hallgatóból és három professzionális fordítóból állt. Az alanyok közül 16-an önállóan fordítottak, 16-an pedig párban. Igyekeztünk minden csoportban mindkét technikával gyűjteni adatokat, de a hivatásosok kategóriájában ez – az önkéntesek kis száma miatt – nem sikerült. Az ő esetükben csak a hangosan gondolkodás módszerét alkalmaztuk.

A vizsgálat során a résztvevők egy 182 szavas újsághírt fordítottak angolról magyarra szótár segítségével. A munka során a fordítók a kétkötetes Akadémiai Nagyszótárt (angol-magyar, magyar-angol), egynyelvű szótárként az Oxford kézisótárt és egy magyar helyesírási szótárt használhattak. A fordítók fordítási utasítást is kaptak. A munkafolyamatról hangfelvételek készültek.

A fordítást követő 2-4 hét elteltével a résztvevőknek lehetőségük nyílt még egyszer javítani a célnyelvi szövegen. Az átdolgozó fázisok hanganyagát is rögzítettük. Az átdolgozás után közvetlenül a résztvevőkkel interjú készült, melynek során fordítói háttérüket és a vizsgálatot kapcsolatos tapasztalataikat térképeztük fel.

A több mint 26 és fél órányi hangfelvétel alapján jegyzőkönyvek készültek, az elemzéseket ezekre a jegyzőkönyvekre támaszkodva végeztük el. Értekezésünkben a fordítási folyamat következő jellemzőit elemeztük:

- Eredményesség: holisztikus értékelés hármasskálán három értékelő (egy fordítást tanító egyetemi oktató, egy hivatásos fordító és egy újságíró) alapján
- Időbeli aspektusok
- A forrásnyelvi szöveg elolvasása a fordítás megkezdése előtt
- A fordítási utasítás elolvasása a fordítás megkezdése előtt
- A szöveg fel- és átdolgozási köreinek száma
- A segédeszköz használat jellegzetességei

A következőkben legfontosabb eredményeinket mutatjuk be.

A fordítási folyamat hagyományosan elfogadott felosztása előkészítő, elkészítő és szerkesztő/javító fázisra funkcionális szempontból problémásnak bizonyult. Ez a felosztás Krings (1986) nevéhez fűződik, aki az elkészítő fázis elejét az első betű leírásához, végét pedig az első változat befejezéséhez köti. Krings a három fázishoz különböző funkciókat rendel hozzá: az előkészítés során elsősorban tájékozódás, esetleg adatgyűjtés folyik, a második fázisban elkészül az első verzió, a harmadik fázis pedig az átdolgozás, utószerkesztés és javítás szakasza. Adataink több szempontból is cáfolják a szakaszok

ilyen jellegű merev elhatárolását. Problémásnak bizonyult a fázishatárok kijelölésének technikája: a fizikai értelemben vett írás véleményünk szerint nem feltétlenül esett egybe a szakaszhatárokkal. A fordítók jegyzőkönyvben fellelhető verbális megnyilvánulásait (pl. „Jó, akkor elkezdem”) megbízhatóbb indikátoroknak tekintettük, mint az írást. Másrészt a jegyzőkönyvek azt igazolták, hogy a fázisokhoz nem rendelhetünk hozzá ilyen mereven bizonyos funkciókat: láttunk példákat arra, hogy a fordító az előkészítő vagy az átdolgozó fázisban fordított (első verziót készített), míg az elkészítő fázisban többen is ellenőrizték korábbi munkájukat. Ezek az eredmények a fordítási folyamat egy másik ismert jellegzetességét a körköröséget (Krings, 1986, Séguinot, 1996) erősítik meg. Míg az említett kutatók azonban a fázisokon belüli körköröséget emelik ki, véleményünk szerint a körköröség a fordítási folyamat egészére jellemző, és a fázishatárokat is átlépi.

Mindezzel együtt nem tartjuk elvetendőnek a fordítási fázisok fogalmát: bizonyos esetekben kifejezetten hasznos lehet, például egyéni fordítói stílusok meghatározásánál. Javasoljuk azonban, hogy a fázisok kezdetét és végét az alanyok megnyilvánulásai alapján állapítsuk meg, és hogy a fázisok funkcióit ne határozzuk meg mereven. Feltételezhetően bizonyos funkciók valóban dominálnak egy fázisban, a fázisok funkciói közötti átjárhatóság azonban igen nagy.

Az eredmény jelentősége a képzés vonatkozásában az lehet, hogy a fordítási folyamatot funkcionális egésznek kell tekinteni. A fordítási munka során természetesen vannak részfeladatok, amelyeket el kell végezni, de eredményeink alapján úgy látszik, mindegy hogy az első verzió megkezdése előtt, közben vagy után végzi el a fordító az adott feladatot.

6.4.1 A hangos gondolkodás és a páros fordítás összehasonlítása

Kutatásunk egyik legjelentősebb eredménye, hogy adataink alapján a hangos gondolkodás és a páros fordítás mint adatgyűjtési technikák nem bizonyultak felcserélhetőnek. A fordítási folyamatot alapvetően befolyásolja a partner jelenléte. Erre bizonyítékkal szolgálnak a következő eredmények:

- Teljesítmény: a párok általában jobb fordítást készítettek, mint az önállóan fordítók
- A fordítás ideje: a pároknak kevesebb időre volt szükségük a feladat elvégzéséhez
- A szöveg fel- és átdolgozási köreinek száma: a párok kevesebbszer mentek végig a szövegen, mint az önállóan dolgozók
- Szótárhasználat: A párok kevesebbszer használták a szótárt, mint az önállóan fordítók. Különösen az ismeretlen szavak jelentésének keresése csökkent drasztikus mértékben.

Kiemelt jelentőséget tulajdonítunk ez utóbbi eredménynek, mert a szótárhasználat fordítói problémamegoldó stratégia (Krings, 1986). Következésképpen, ha a szótárhasználat radikális változásokat mutat, akkor maga az egyik probléma-megoldó stratégia változik meg, vagyis a kognitív folyamatok a két adatgyűjtési technika alkalmazása esetén nem egyeznek.

Érvelhetnénk úgy, hogy a két almintá közötti nyelvi kompetenciabeli különbségek vezetnek a fenti eredményekhez. A jegyzőkönyvek azonban arra utalnak, hogy pármunka esetén mintegy összeadódik a két fordító szókincese, sőt egyéb nyelvi és kognitív kompetenciáik is, ezáltal „több szem többet lát” helyzet áll elő: felgyorsul és hatékonyabbá válik a folyamat. Ugyanígy a praktikus munkamegosztás (pl. a pár egyik tagja szótár, a másik már gépel) alapvetően megváltoztatja a munka tempóját, de a kognitív folyamatokat is, hiszen a fordítók nem vonódnak be a fordítás – egyik vagy másik - klasszikus részfeladatába.

Összefoglalva, adataink azokat a korábbi hipotéziseket erősítik meg (Kusssmaul és Tirkkonen-Condit, 1995; Jääskeläinen, 2000; Bernardini, 2001), amelyek szerint a páros fordítás arról mutat képet, hogy a párok hogyan fordítanak, nem pedig az önállóan fordító egyének kognitív folyamatairól. Ez nem jelenti azt, hogy a páros fordítás mint adatgyűjtési módszer teljes egészében elvetendő. Nagyon érdekes lenne például feltérképezni, hogy a páros fordításnak milyen előnyei és hátrányai vannak az egyéni fordításhoz képest. Ennek jelentősége lehet az oktatás szempontjából, hiszen az interjúk során többen jelezték, hogy a fordítóképzés során találtak páros fordítási feladatokkal.

Az eredmények általánosításával azonban a minta kicsiny volta miatt óvatosan kell bánni. A különbségek egy része nem bizonyult szignifikánsnak, és még a szignifikáns különbségeket sem tekinthetjük általában véve érvényesnek, hiszen a minta és a feladatmegoldás körülményei meglehetősen specifikusak voltak. Hasonló típusú vizsgálatot mindenképp érdemes lenne nagyobb mintán megismételni, annak érdekében, hogy határozottabban véleményt tudjunk formálni a két adatgyűjtési eljárás különbségeiről.

6.4.3 A fordítói kompetencia fejlődése

Vizsgálatunk legfontosabb eredménye tömören úgy foglalható össze, hogy a fordítók a *tapasztalat növekedtével egyre jobb fordításokat készítettek egyre kevesebb idő alatt*. A hatékonyság növekedését sem felszínesség, sem nemtörődöm hozzáállás, sem teljes automatizálódás nem kísérte. A szöveg *fel- és átdolgozási köreinek száma* nőtt, ami inkább a kontrollfolyamatok felerősödésére utal. Ez egyrészt a szakértelem jele lehet (Sirén és Hakkarainen, 2002), másrészt utalhat globális megközelítés alkalmazására is: a tapasztaltabb fordítók egészben szeretnék látni a szöveget, és nem mikroszintű problémák megoldására pazarolják energiáikat. Nyilvánvalóan a mikroszintű problémák megoldásának automatizálódása (pl. szó-szintű problémák) teszi lehetővé a tapasztalt fordítók számára, hogy komplexebb, átfogóbb, globálisabb problémák kezelésére koncentrálhassanak.

Különösen szembeötlő volt a hivatásos fordítók és a fordítóképzésben résztvevő hallgatók hajlandósága a *fordítások átdolgozására*. Az átdolgozás alkalmával (2. adatfelvétel) több időt töltöttek a már elkészült célnyelvi szövegek javításával, és többször futottak végig a szövegen, mint kevésbé tapasztalt társaik. Az átdolgozás során szótárt csak a hivatásos és a leendő fordítók használtak, céljuk elsősorban szinonimakeresés volt, ami egyértelműen mutatja a célnyelvi szöveg finomítására irányuló tudatos erőfeszítéseiket.

A vizsgálat tapasztaltabb alanyai arról is tanúbizonyságot tettek, hogy a fordítás megkezdésekor több figyelmet szentelnek a feladat kontextualizálásának: nagyobb valószínűséggel olvasták el a *fordítási utasítást*, mint a nyelvtanulók. Ezzel szemben a *forrásnyelvi szöveg elolvasása* terén nem találtunk különbségeket a különböző tapasztalattal rendelkező fordítók között. Érdekességként jegyezzük meg, hogy sem a fordítási utasítás, sem a forrásnyelvi szöveg előzetes végigolvasása *nem mutatott összefüggést a teljesítménnyel*.

Szembeötlő különbségeket tapasztaltunk a csoportok között a *szótárhasználat* terén is. Az 1. adatfelvétel során (a fordítás elkészítése) a fordítói tapasztalat növekedésével csökkent a szótárhasználat mennyisége. Mivel a szótárhasználatot Krings (1986) óta fordítási problémák indikátorának tekintjük, használatának csökkenése kevesebb megértés-jellegű probléma jelenlétére vagy más megoldó stratégiák alkalmazására utal a tapasztaltabb csoportokban. Különösen feltűnő az „ismeretlen szavak keresésének” drasztikus csökkenése a tapasztalt fordítók esetén. Ezek az eredmények a fordító

szókincsének nagyságára hívják fel a figyelmet, ami a fordítói szakértelemmel foglalkozó irodalomnak jelenleg nem gyakori témája. A magas szintű idegen nyelvtudást a legtöbben előfeltételként kezelik, és nem vesznek tudomást arról, hogy a jó nyelvi kompetenciával bíró egyének között is igen komoly különbségek jelentkezhetnek a nyelvtudás egyes összetevői terén. Vizsgálatunkban még a fordítóképzős hallgatók és a hivatásos fordítók között is nagy különbséget találtunk az ismeretlen szavak keresése terén, ami arra utal, hogy a két csoport között a nyelvi különbségek (is) nagyobbak lehetnek, mint korábban feltételeztük.

A szótárhasználat *minőségi mutatói*, vagyis több szótári keresés egy lexikai probléma megoldására, illetve az egyének/párok által összességében használt segédeszközök száma nem mutatott összefüggést sem a szakértelemmel, sem a teljesítménnyel. Ez nem jelenti azt, hogy ezek a mutatók haszontalanok lennének a szakértelem jellemzése szempontjából. Előfordulhat, hogy a forrásnyelvi szöveg vagy a rendelkezésre bocsátott segédeszközök jellegüknél fogva nem járultak hozzá a különbségek felfedéséhez.

A *szótárhasználat céljára* vonatkozóan nehéz volt egyértelmű mintázatokat találni. Az egyetlen jól látható tendencia szerint a fordítóképzésben résztvevő hallgatók használták a szótárakat leggyakrabban a célnyelvi szöveg formai alakítására. Jääskeläinen (1999) más esetekre alkalmazott magyarázata jól használható esetünkben is: a hallgatókban tudatosul a célnyelvi szöveg jólformáltságának követelménye, ugyanakkor még nem rendelkeznek megfelelő önálló eszközökkel az ehhez kapcsolódó problémák kezelésére, ezért keresnek segítséget a szótárakban. Megjegyezzük, hogy a képzés hatása is jelentkezhett esetünkben, amennyiben fokozott és tudatos eszközhasználatra buzdítják őket oktatóik.

Eredményeink egy része, különösen a fordításra szánt idő és a szótári keresések számának egyértelmű csökkenése a tapasztalat függvényében, ellentmond korábbi kutatási eredményeknek (pl. Krings, 1986, 1988, Gerloff, 1988, Jääskeläinen, 1999, Sirén és Hakkarainen, 2002). Ezt az eltérő kutatási körülményekkel magyarázhatjuk. Feltehetőleg vizsgálatunkban rutin jellegű feladattal találták szemben magukat a fordítók, ez pedig a szakértő viselkedés jellegzetességeit hívta elő a tapasztaltabb fordítókból. Úgy gondoljuk azonban, hogy eredményeink és más kutatási eredmények inkább kiegészítik, mint érvénytelenítik egymást. Vizsgálatunk azt igazolta, hogy a fordítási folyamat bizonyos elemei gördülékenyen működnek tapasztalt fordítók esetén. Ez a viszonylag könnyed és elegáns munkastílus lehetővé teszi a szakértő fordító számára, hogy nagyobb kihívást jelentő feladathelyzetekben több figyelmet tudjon szentelni a fordítási problémáknak. Az említett korábbi kutatások viszonylag nehezebb forrásnyelvi szövegeket alkalmazhattak, és ezzel gyakorlatilag más fordítási helyzetet teremtettek. A megjelenő különbségek is ezzel magyarázhatók.

6.5 A kutatás relevanciája

Eredményeink elsősorban a fordítóképzés számára nyújthatnak hasznos információkat. A kvalitatív és a kvantitatív vizsgálat is a nyelvi és a fordítói kompetencia szoros kapcsolatát mutatta. Ez arra utal, hogy a nyelvi kompetencia fejlesztése és a nyelvi kérdések nem kerülhetők meg a képzés során.

A fordítási folyamat vizsgálata azt mutatta, hogy a tapasztalt fordítók kevesebb idő alatt jobb fordítást készítettek. Ez az eredmény jól használható érv lehet a fordítói szakma érdekvédelmében.

A fordítási folyamat vizsgálatának további eredményei segíthetnek a laikus és a szakértő fordítói viselkedés megkülönböztetésében, de csak nagyon óvatosan vonhatunk le belőlük következtetéseket a képzés feladataira vonatkozóan. A korai kutatások (Krings,

1986, Lörcher, 1991b) arra törekedtek, hogy az eredmények alapján javaslatokat tegyenek a képzés számára. Ez azonban nem ilyen egyszerű, mivel még a folyamatorientált kutatások is gyakran csak „tüneteket” jeleznek, okokat nem. Ilyen például a fordításra szánt idő, a szótári keresések száma, vagy akár a szöveg átdolgozásainak száma is. Ez utóbbi esetben például könnyű lenne levonni azt a következtetést, hogy buzdítsuk a hallgatókat arra, hogy minél többször vizsgálják meg és dolgozzák át a létrehozott célnyelvi szöveget. Ha azonban a fordító nem tudja, mit kell tennie a célnyelvi szöveggel, hiábavaló többször átnéznie azt.

Fontos eredménynek tartjuk a fordítások értékelésére vonatkozó adatainkat. A kvantitatív és a kvalitatív vizsgálat is azt igazolta, hogy a fordítás értékelése egyáltalán nem olyan szubjektív, mint azt korábban feltételeztük. Megfelelően kidolgozott értékelési útmutatók és két értékelő alkalmazása esetén a fordítások értékelése nem kevésbé megbízható, mint pl. az anyanyelvi íráskészség értékelése.

Ismereteink szerint ez az első kutatás, amely a hangos gondolkodás és a páros fordítás összehasonlítását tűzte ki célul. Azt találtuk, hogy a két adatgyűjtési eljárás nem ekvivalens. Ennek elsősorban kutatómódszertani jelentősége van: folyamatorientált kutatások tervezése és értelmezése során mindenképp figyelembe kell venni ezt az eredményt.

Végezetül személyes tapasztalataink alapján szeretnénk megjegyezni, hogy minkét adatgyűjtési technika (hangos gondolkodás és páros fordítás) értékes didaktikai eszköz lehet a fordítást oktatók kezében. Többen jelezték az interjú során, hogy sokat tanultak a feladatból. Emellett a hangfelvételek lejegyzése során olyan betekintést nyerhettünk a fordítók gondolatmenetébe és problémáiba, ami hagyományos tanítás során valószínűleg soha sem adatik meg az oktatóknak.

6.6 A kutatás korlátai

A kutatás eredményeinek értelmezése során két tényezőt kell szem előtt tartani. Először is nem szabad elfelejtenünk, hogy a kvantitatív mérés nyelvtanulókkal készült, és közülük is az egyik al minta tagjait kezdő nyelvtanulók képezték. A rájuk érvényes eredmények nem általánosíthatók tapasztaltabb fordítókra. Ugyanakkor az eredmények alapján hipotéziseket állíthatunk fel szakértőkre vonatkozóan, ezeket azonban hasonló eljárásokkal tesztelni kell.

A folyamatorientált vizsgálat esetében a problémát az alanyok csekély száma okozza. Bár a fordításkutatáson belül mintánk kétség kívül nagynak számít, nem éri el azt a határt, hogy bátran általánosíthassuk eredményeinket.

Mindkét vizsgálatra igaz az is, hogy nem a fordításról általában, hanem az adott körülmények között, adott típusú szöveget fordító mintáról adott képet.

6.7 A téma további kutatásának lehetőségei

Ahogy már fentebb is jeleztük, igen fontos lenne kvantitatív jellegű kutatásunkhoz hasonló vizsgálatokat végezni tapasztaltabb fordítókkal. Ez fényt deríthetne a fordítói kompetencia összetevőinek súlyára és egyes háttérváltozók jelentőségére is szakértők esetén. A fordítóképzés feltehetőleg sokat profitálna az olyan, általunk nem vizsgált változók szerepének ismeretéből, mint a célnyelvi íráskészség, a metakogníció, a fordításhoz kapcsolódó attitűdök, a fordításelméleti ismeretek és a forrásnyelvi szöveg tartalmára vonatkozó előzetes (szak)tudás. Mindenképp fontosnak tartanánk, hogy ugyanaz a minta többféle szöveget is lefordítson, ezáltal információkat kaphatnánk arról, hogy mennyire szöveg-típus specifikus a fordítói kompetencia.

Bár a fordítások holisztikus értékelése meglepően megbízhatóan bizonyult, a hibaelemzés és a pozitív értékelés technikái további finomításra várnak. Különlegesen

érdekes kutatási terület lehet a hiba- és problématispológiák kérdése. Faktoranalízis nemcsak pozitív értékelés esetén végezhető el, hanem hibajavítást követően is. Ezáltal betekintést nyerhetnénk abba, hogy a különböző hibatípusok hogyan csoportosulnak.

Értekezésünkben a folyamatorientált vizsgálat során gyűjtött adatoknak csak töredékét elemeztük. A későbbiekben további elemzési szempontokból is elemezhetők az adatok:

- A szótárban talált információk feldolgozásának módja
- A szótárban keresett lexikai egységek kvalitatív elemzése: bizonyos szavakra nem a kezdő, hanem a tapasztalt fordítók kerestek rá. Az ilyen jellegű anomáliák magyarázata.
- A fordítási problémák és a megoldásukra használt stratégiák
- Metakogníció a fordítási folyamatban
- Döntéshozási mechanizmusok
- A tudatos probléma-megoldási kísérletek és a célnyelvi szövegben fellelhető hibák összefüggése.
- Reflexió és (ön)értékelés a fordítási folyamatban
- Nemek közötti különbségek egyrészt a verbalizálás mennyisége és minősége, másrészt a fordítási folyamat mutatói terén
- A páros fordítások társalgás-elemzése: kooperáció vagy versengés? Az együttműködési stílus hatása a fordítási folyamatra és az eredményességre
- A hangos gondolkodás és a páros fordítás összevetése további (fent említett) dimenziók mentén.

Bizonyos kérdések megválaszolása azonban feltétlenül újabb kutatás(ok) megszervezését igényli. A minta kis mérete miatt nem tudtuk például megmagyarázni, hogy mi okozza az egyes almintákon belüli nagy különbségeket. A fordítóképzés szempontjából különösen fontos lehet a hivatásos fordítók és a fordítóképzős hallgatók kategóriáján belüli eltérések magyarázata.

Kissé kényes, de nem elhanyagolható kérdés ehhez kapcsolódóan az, hogy a szakértők, illetve a hallgatók között találunk-e különbségeket a nyelvi kompetencia terén. Ha igen, akkor ezek hogyan és milyen körülmények között befolyásolják a fordítási folyamatot és a teljesítményt – amennyiben egyáltalán befolyásolják.

Egy másik, hasonlóan érdekes probléma a forrásnyelvi szöveg típusát és tartalmát érinti. Ezen belül is kiemelt figyelmet érdemel az a kérdés, hogy a hivatásos fordítók hogyan járnak el rutin és nem-rutin feladatok elvégzése során. Bár Laukkanen (Tirkkonen-Condit és Laukkanen, 1996) már végzett erre vonatkozóan vizsgálatokat, de csak egyetlen alannal. Nagyobb minta vizsgálata megmutatná, hogy a fordításban felismerhető-e az úgynevezett szub-professzionális viselkedés.

Kutatásmódszertani kérdésként felmerül, hogy az adatgyűjtési technikák nem befolyásolják-e a feladatvégzés sikerét. Hangos gondolkodás esetén a metakogníció és a megnövekedett tudatosság eredményezhet teljesítményjavulást, míg páros fordítás esetén a társas facilitáció jelensége segíthet a jobb fordítások létrehozásában.

Végezetül, mivel a számítógép-használat a fordítók hétköznapi munkájának szerves részévé vált, érdemes lenne megvizsgálni, hogy a fordítói memória, az internet és egyéb információs technológiák hogyan befolyásolják a fordítás folyamatát, esetleg eredményességét.

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