DIRECTIONALITY IN

COLLABORATIVE TRANSLATION PROCESSES

A Study of Novice Translators

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Dissertation presented for the award of Doctor of Philosophy

PhD program in Translation and Intercultural Studies

Universitat Rovira i Virgili, Spain

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2007

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Acknowledgments

Above all, I would like to express my sincerest gratitude to the co-supervisors of this dissertation, Professors Gyde Hansen and Anthony Pym. Professor Hansen's support of me has far exceeded what anyone could ever expect of a thesis supervisor, and I feel privileged to say that I have been treated as a friend by this truly extraordinary person. Without her invaluable advice and guidance I would have never been able to conduct the research that led to this dissertation, or indeed to write the dissertation itself. Professor Pym's critical reading of the dissertation and his incisive comments have helped me to see the flaws of my reporting on the research I had conducted, and to produce a much better piece of writing than it originally was. More than that, Professor Pym has been the driving force behind the PhD program in Translation and Intercultural Studies in Tarragona, without which I would have never been given the opportunity to meet the leading figures in Translation Studies or the fellow students from around the world, all of whom have made a profound impact on my intellectual life. It is difficult to single out the professors who have influenced me most, as I have learnt something from each one of them. The following persons have taken the time to comment on my work in progress, for which I am very grateful: Professors Christopher Scott-Tennent, Daniel Gile and Andrew Chesterman, as well as Nike Pokorn and Elzbieta Tabakowska, whom I met at CETRA in 2006.

Thanks are also due to Spain's *Ministerio de Educación y Ciencia* for giving me a travel grant, which has made life a lot easier. Copenhagen Business School had me on board for free on two occasions, and I take this opportunity to warmly thank everyone at that institution, and also my friend Heidi Kyhl for generously providing me with a place to stay in the Danish capital.

At the English Department of the University of Zagreb in Croatia, where I work, a heartfelt appreciation goes to Professor Jelena Mihaljevic-Djigunovic for her useful advice and encouragement in the early stages of my pilot study. My boss, Professor Milena Žic-Fuchs, has been very supportive of my desire to pursue a doctoral degree abroad, for which I am sincerely grateful. I am also indebted to Professor Vladimir Ivir, who has secured financial support for my research-related travels on several occasions. I owe a great deal to my fellow *lektors* from the Department, who have been very understanding of my obligations related to this research.

Special thanks are due to my friend Nataša Vukovic for her help with the statistics and proofreading the text, as well as for her encouragement.

The following colleagues took the time from their busy schedules to serve as external evaluators of the translations used in the pilot study and/or in the main study: Goranka Antunovic, Kolumbina Bencevic, Robert De Silva, Nata Hajdu, Maura Moralic and Lovorka Zergollern-Miletic. Nata Hajdu has also helped me with her friendship and valuable comments throughout this project.

I am also very grateful to my colleagues Diana Berber, Sandra Poupaud, Kristian T. H. Jensen, and Costanza Peverati for helping me obtain the literature that was unavailable in Croatia. Diana Berber was also very kind and translated the summary of this work into Spanish for me.

I am especially indebted to the students who generously volunteered to take part in the experiments. As they are too many to mention here, I list their names in Appendix D.

On a more private note, I would like to thank all my friends and relatives, especially my mother Sonja and my grandfather Martin, for having faith in me and encouraging me throughout this project, and particularly in the last few months of my thesis writing. Last but not the least I thank God, without whom I would never have been able to do any of this.

All the mistakes and flaws of this work are entirely of my own doing.

This work is dedicated to the Tarragona 2003 Invisible College,

in particular to the memory of our colleague Moustafa Gabr

Abstract

Translation into the second language (L2 translation) is a reality in many settings around the world, especially – but not exclusively – in those cultures that use a "language of limited diffusion". Even translators whose mother tongue is one of the "major" languages are more and more frequently required to work out of their first language (L1) into English, the dominant language of the globalizing world. This makes L2 translation an increasingly important issue for the practitioner, and research on L2 translation a very relevant topic for Translation Studies.

In the past, prescriptive approaches to translation denounced the practice of L2 translation as unprofessional or even impossible. As a result, L2 translation was until recently largely neglected both in translation theories and in research. Over the past ten to fifteen years, however, the number of studies dealing with L2 translation has been on the increase, with translation into the non-mother tongue even becoming the main topic of forums and conferences, and their subsequent publications (e.g. Kelly et al. 2003; Grosman et al 2000).

The aim of this study is to compare L1 and L2 translation processes by novice translators, in order to isolate the features that differ significantly according to direction, with a view to improving translation teaching. To this end, the study sets out to test the following general hypothesis: "L1 and L2 translation display some differences that can be attributed to *direction* of translation". More specifically, it is hypothesized that L1 and L2 translation differ not only in products, but also in some important aspects of translation *processes*. The following features are therefore selected as likely to be relevant:

- The number and type of problems the subjects encounter;
- The solutions they consider;
- The ways in which they assess the solutions and make final decisions;
- The resources they consult;
- The actions/interactions they take;
- The arguments they use in making decisions;
- The quality of their final products.

The study is set up as a set of experiments involving novice translators – university students who have just passed their final translation exam. All the subjects have Croatian as their first language L1, and have been learning English as their second language for at least 12 years. Two comparable general-language source texts, one in English and the other in Croatian, are used in the experiments.

The method of data collection used in the experiments is the "collaborative translation protocol," a type of verbal report obtained from collaborative (group) translation sessions. Four groups of three subjects are asked to translate the two texts, one into their L1 (L1 translation task) and the other into their L2 (L2 translation task). Collaborative translation (cf. Kiraly 2000a), albeit not typical of professional translation practice, is nevertheless used in educational settings, and has been part of the subjects' translation training. The translation sessions are recorded by a digital video camera, and transcribed. Pre- and post-experiment questionnaires complement the data from the translation sessions. Control experiments aimed at comparing collaborative and individual translation are carried out with comparable subjects and involve choice network analysis (cf. Campbell 2001) and integrated problem and decision reports (cf. Gile 2004).

Both quantitative and qualitative analyses are used to process the data. The findings are expected to be applicable in translation training, especially in settings where L2 translation is taught at university level.

Key words

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1   Introduction

The author of this study had been a translator working into and out of her second language (L2), English, and L2 translation teacher for more than a decade before finding out about the "golden rule" followed by translators in major-language settings: You are only ever supposed to work into your first language. The direction of translation that for her and her colleagues was nothing out of the ordinary turned out to be "inverse," wrong, forbidden. This realization was intriguing, spurring the author's initial interest in directionality as a research topic. A questionnaire survey was conducted, which showed that more than 70% of full-time translators and interpreters in Croatia do more than half of their workload into their L2 English (Pavlovic, forthcoming). In many other settings around the world that involved a "language of limited diffusion," researchers seemed to be describing similar situations. Clearly, what was unthinkable for some translators was everyday practice for others.

The first research questions that thus arose were these: Are translation processes in the two directions different? If so, in what ways exactly, and to what extent do they differ? How can we study these processes, and how can we measure the differences? What kind of experiments can we set up, and with what kind of subjects? Would there be any practical applications of this type of research for translator training in settings where L2 translation is a regular occurrence in the professional market?

In settings that use a language of limited diffusion, L2 translation is not only practiced, but also taught at university level. In minority-language settings, people have traditionally invested a lot of effort in learning languages. Although L2 translation courses doubtlessly have to deal with the acquisition of second-language skills as well as translation skills, the level of the students' L2 competence, especially when it comes to major languages such as English, is generally rather high. This is not to say that the teaching of translation could not be improved.

To that end, and from the questions outlined above, the idea emerged to study novice translators, that is, young women and men who had just passed their final-year English-Croatian and Croatian-English translation exams at the university and were about to embark on their professional translation careers. If the survey mentioned above

was anything to go by, they were likely to be asked to translate in both directions, as would the successive generations of their colleagues. By studying the problems they encountered when translating in the two directions, as well as the ways in which they dealt with those problems, we hoped to become better equipped to help future students master L2 translation.

Teaching methods based on the Social Constructivist idea of collaborative learning had been used by the author for a number of years prior to this research. Listening to the students in class as they jointly translated texts or revised each other's translations generated the idea to use precisely such discussions to study translation processes in the two directions. Practical considerations (e.g. sound quality) ruled out the use of observational research method, and an experimental approach was opted for instead. The idea was to have several groups of novices translate collaboratively the same texts in an environment where their work could be recorded and later studied.

In this dissertation we report on the findings from that study. We begin with an overview of the previous work in the areas of directionality and of translation process research. We discuss in particular the methodological issues in research on translation processes. Next we present the hypotheses, research design and methodology used in the study. Key concepts, which are partly adopted from the existing literature and partly the result of our own data analysis, are presented, defined and exemplified in Chapter 4. The findings from the collaborative translation protocols are presented in Chapter 5, while Chapters 6 and 7 report on the findings from the questionnaires and from the control experiments respectively. In the final chapter we outline the main conclusions and their limitations, and make suggestions for the possible application of the findings in translation training. We also outline possible avenues for further research.

2   Previous work in the area

2.1   Directionality of translation

2.1.1   Key terms related to directionality of translation

"Directionality" refers to whether translation or interpreting is done into one's "first language" ("mother tongue," "native language," "language of habitual use") or out of it – into one's "second language" ("non-mother tongue," "foreign language"). Other combinations are also possible, such as from one's first language into the third, from the third into the first or second, from the second into the third, and so on. However, our concern here is primarily with translation from the first language into the second ("L2 translation"), as contrasted with translation from the second language into the first ("L1 translation").

Various terms have been used in the literature to designate translation or interpreting from one's first into one's second language, among them "le thème", "service" translation, "inverse" or "reverse" translation, "retour" interpreting, and so on. As they all entail a negative value judgment ("inverse", for example, could be seen as evoking "going in the wrong direction"), their use will be purposely avoided here.

The terms "mother tongue," "language of habitual use," "native language," "foreign language" and "second language" are themselves problematic, as pointed out by various authors. In a detailed discussion in the proceedings of the 2002 Forum on Directionality in Translating and Interpreting, Kelly et al. (2003a: 35-40) stress the "ideological charge" many of these terms have. These authors aim to "displace the hegemony of the expressions 'mother tongue' or 'foreign language' or 'direct translation' and 'inverse translation' in favor of a more neutral classification of the different working languages and translators' activities" (2003a: 35). They end up adopting the nomenclature of "A language" and "B language," which is used by the International Association of Conference Interpreters (AIIC). AIIC (2006) defines "B language" as a language "other than the interpreter's native language, of which she or he has a perfect command and into which she or he works from one or more of her or his other languages".

While we agree with the arguments they offer and their intention, this definition is not suitable for the purposes of our project. Our study takes place in an educational setting, and the subjects are "novices" in translation. Even though their level of L2 competence is very high (see 3.4), it cannot be described as "perfect command" (even if such command of any language exists, which is doubtful). We have therefore decided to stay with the labels "first language (L1)" and "second language (L2)," originally from the field of Second Language Acquisition.

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One of the problems with the term "second language" is that it is sometimes used of any language a person has learnt or is learning after mastering the first language, regardless of their level of competence. We feel, however, that if this term is used in Translation Studies its reference should be limited to a language that has been mastered to a relatively high level of competence (C1 or higher, see 3.4), and from and into which the translator is either already working, or might be asked to work, in the course of their professional translation career. This definition seems more accurate in terms of actual translation practice in minority-language settings, as it is slightly broader and therefore more realistic than AIIC's B language definition. At the same time, it excludes languages that have been mastered passively or to lower levels of competence (B2 or lower, see 3.4).

In this respect, it is also worth pointing out, with Pedersen (2000: 109), that "first language" does not necessarily mean chronologically first, but "the language that is most readily available" to a translator. This is especially relevant in the case of translators who have lived most of their lives in a linguistic environment other than that into which they were born, so that what was chronologically the second language becomes the person's dominant language. Prunc (2000:10) points out that the linguistic competence of bi- or multilingual persons can be described as a continuum that varies with time, and in which the dominant position can be held by the first language as often as the second. Furthermore, in his opinion, a person's linguistic competence and creative potential can be divided up among different languages depending on specific fields, and they can change in the course of the person's socialization (Prunc 2003: 83).

The term "first language" is for many authors preferable over one that is more widespread in general use – "mother tongue". Prunc (2003: 82) says that the expression "mother tongue", in spite of all the changes it has undergone in history, has always belonged to conceptual systems determined by ideological aspects. As such, it is, in his opinion, not suitable for describing actual translation competence in terms of either its linguistic or cultural aspects. A person's "mother tongue", he points out, need not be that person's more developed linguistic competence. The ties that link individuals to their mother tongues are, rather, "emotional, ethical and cultural" (2003: 83).

Consider the case of the children of emigrants who grew up in the linguistic environment of the receiving country. The language they feel to be their "mother tongue" may in fact be their second (or even third) language in terms of actual level of competence. For example, second-generation Croatian emigrants to the United States,

Canada or Australia may declare Croatian to be their "mother tongue," while English is in fact their strongest language ("first language" in our sense). Their Croatian language competence can in reality be very low and restricted to domestic contexts. In some cases, literacy in both languages can be suboptimal, with people being "illiterate in two languages," to use a popular phrase.

The idealized notion of "native competence" can be called into question also for first-generation expatriates. The level of L1 competence of expatriate major-language speakers, for example of English or French "native speakers" living in Croatia, may have been compromised through years of living outside their L1 environment. Even without emigration, "native competence" does not necessarily equal perfect competence, especially when it comes to the standard variety of a language. In countries such as Croatia, whose national language is difficult enough without the existence of confusing – and often conflicting – norms of standardization, even highly educated native speakers can suffer from L1 insecurity.

These are some of the reasons why the use of *any two* contrasting terms will be fundamentally misleading. Whether we opt for the labels "mother tongue" vs. "non-mother tongue," "first language" vs. "second language," or "A language" vs. "B language," the binary opposition will suggest a much clearer distinction between two languages than the one that exists in many real-world cases. It fails to take into account the realities of the multicultural, multilingual, fluid world we live in, not only when "bilingual" speakers are concerned ("bilingual" being another term eluding easy definition), but more generally. This is especially true when one of the languages in question is English, because of its special position as a *lingua franca* of the globalizing world. As Lorenzo (2002: 86; our translation from Spanish here and throughout) explains, the very distinction between "mother tongue" and "second language" is called into question by the revolution in international communication, increased mobility and the development of technology, all of which give rise to increasingly multicultural societies. By globalization we understand the processes that lead to increasing integration and interdependence of economic, technological, political, cultural and social systems across the world.

In this study we will continue to use the terms "first language (L1)" and "second language (L2)" only with all the above observations in mind.

2.1.2   Traditional view of directionality

The traditional view of translation theorists regarding directionality is probably best reflected in the following (in)famous statement by Peter Newmark (1988: 3): "translat[ing] into your language of habitual use […] is the only way you can translate naturally, accurately and with maximum effectiveness." Although Newmark acknowledges that in practice translators "do translate out of their own language," he dismisses the practice by calling it "service" translation and by saying that those translators who engage in this "contribute to many people's hilarity in the process" (ibid.).

In the past decades, Translation Studies has seen a shift from traditional prescriptivism, as represented by Newmark, toward more descriptive, empirically-oriented research-based work. However, when it comes to directionality, some attitudes rooted in traditional prescriptivism seem to persist, even among researchers. The notion that "translating into one's mother tongue generally yields better texts than translating out of it" (Marmaridou 1996: 60) was taken for granted in a study conducted in 1996, in which specificities of particular language pairs, text types or cultural settings are not taken into account or problematized. Marmaridou (1996: 59; our italics) further claims, without offering any evidence, that "a professional translator is *usually asked to*, and *prefers* to translate into his or her mother tongue". For her, translation out of the mother tongue happens only in didactic and experimental settings (ibid.).

According to Beeby (1998: 64), Newmark's opinion is "so widely held in Europe that the unmarked direction of translation is into the mother tongue." This is probably true of major-language settings, especially in western Europe. As Prunc (2003: 82) observes, "the principle of mother tongue [translation] as a guarantee of translation quality is present in all Translation Studies literature as well as in professional norms of recruitment." Kearns (2006) further argues that "changing mindsets within the TS community appears far easier […] than does changing the mindset of the professional community."

Indeed, the principle that translators should only work into their mother tongue still seems to be widely accepted as one of the "golden rules" among the practitioners who have written articles on "best practices" (e.g. Carpenter 1999, Borges 2005, Neilan 2006). Many professional associations (e.g. ATIA 2004, ITA 2006, CEATL 2006) in their codes of ethics urge members to work exclusively into their mother tongue. The

International Federation of Translators (FIT) has on its website a "Guide to buying translations," which says that "professional translators work into their native languages" and that "the translator who flouts this basic rule is likely to be ignorant of other important quality issues as well" (Durban 2002).

Even a cursory glance at translation agencies on the web (see e.g. SDL 2006, The Language Factory 2006, Syntacta 2006) reveals that many make a point of assuring potential clients of their policy to employ only mother-tongue translators. The portal "Translation & Languages" (2006), which describes itself as "your ultimate guide to translation services that helps you choose translation agencies, translators, and language translation providers," offers the following advice to potential users of translation services: "The translator should only translate into his or her mother tongue and preferably live in a country that speaks the target language or have close ties to his or her home country."

However, this question is in many settings simply not up for discussion. In countries using a "language of limited diffusion" – that is, a language not widely used outside its primary linguistic community or frequently acquired as a second language – L2 translation is taken for granted. If a client needs a translation or interpretation from, say, Croatian into a major language such as English, the question is not framed in terms of who should do it but rather who *can* do it. As L1 Croatian translators/interpreters with sound L2 English by far outnumber the L1 English translators/interpreters with L2 Croatian good enough for work involving that language, clients are likely to use the services of an L1 Croatian translator/interpreter regardless of direction.

2.1.3   *Challenging the traditional view*

Over the past decade, an increasing number of authors from settings involving languages of limited diffusion have started to take a critical stance toward the traditional view of directionality. Thus Campbell (1998: 4) describes L2 translation as "an activity as normal and possibly as widespread as translation into the first language." Snell-Hornby (1997; cited in Kelly et al. 2003b: 26) likewise points out that "translation into English non-mother tongue is a fact of modern life." According to Prunc (2003: 82), "the fact that we do not have a single piece of empirical evidence to confirm the validity of this maxim turns the principle of mother tongue [translation] into an ideological

construct." Stewart (1999: 62) believes that with "the vast array of resources offered by contemporary technology it seems outlandish and anachronistic to veto translation into the foreign language aprioristically".

In the area of interpreting, traditional western views are also changing. The growth of the non-institutional interpreting market has meant an increase in bidirectionality (Fernández 2003: 347). Even in institutional settings, work into L2 is sometimes inevitable: "The European Institutions will require some accession country interpreters to work back [sic] into B, given the shortage of interpreters with a sufficiently sound knowledge of candidate country languages in B or C" (EMCI 2002: 1). Interpreting scholars and trainers seem to be switching from saying work into L2 "should not be done" to investigating ways in which interpreters could be trained to do it well (e.g. Minns 2002, Hönig 2002, Fernández 2003, Donovan 2003, Tolón 2003, Padilla & Abril 2003). Interestingly, one study on user expectations (Donovan 2002) has found the delegates to be "uninterested" in whether the interpreters are working into their mother tongue or out of it, i.e. there was no clear correlation between client satisfaction and directionality.

Campbell (1998: 4) suggests that Translation Studies has tacitly assumed the existence of a perfectly bilingual translator, without paying much heed to the translator as "a living being with a role and abilities that can be described and discussed". Lorenzo (1999: 124) makes a similar point when she says that "until very recently, translation theory took a prescriptive stance based on an idealized construct of translation instead of observing the reality of the translator." The point is further driven home by Hansen et al. (1998: 59-60), who note that "it is difficult for researchers based in countries with major languages to accept how important translation into the foreign language is for a country like Denmark, whose language is virtually only mastered by its own inhabitants (population: 5.5 million)". The situation is similar in Finland, where "it is impossible to find sufficient foreigners […] able to work as translators, and in any case, foreigners seldom acquire a good enough passive command of Finnish" (Ahlsvad 1978, cited in Campbell 1998: 27). McAlester (1992: 292), also writing in the Finnish context, makes the same point when he says that the "volume of work exceeds the number of available translators who are major language native speakers" (ibid.). McAlester reaches a conclusion akin to Campbell's, namely that the lion's share of translation out of "minor" languages is inevitably done by native speakers of those languages.

The Slovene scholar Pokorn (2005: 37) agrees that translation into L2 is "especially common in languages with restricted distribution" but also "in larger linguistic communities which are pushed into a peripheral position because of the global distribution of power and in major-language societies when communicating with ethnic minorities." China and Australia are listed as respective examples. Like Lorenzo and others, Pokorn criticizes traditional translation theory for ignoring the practice of L2 translation and for accepting what she describes as "predominantly Romantic assumption" that translators should work only into L1:

> This conviction of the linguistic and cultural inferiority of inverse translations in an opaque way ethnocentrically defends the superiority of post-Romantic West-European concepts concerning translation and translational practice, and thus consequently the *a priori* superiority of the translators and translational practice of major-language communities. (Pokorn 2005: 37)

The issue of major vs. minority languages is discussed at length by Cronin (2003). Working within the Cultural Studies paradigm, this author points to the asymmetry in the status of various languages and laments the absence of minority-language perspectives in both traditional and current views on translation. He observes that "not one of Europe's lesser-used languages merits an entry in [Robinson's *Western Translation Theory from Herodotus to Nietzsche*] anthology". This silence, according to Cronin (2003: 139), "is all the more surprising in that minority-language cultures are translation cultures *par excellence*". Without specifically tackling the issue of directionality, Cronin makes use of the metaphor of translator's (in)visibility to describe the position of translators working in minority languages as being "doubly invisible" (2003: 140) at a theoretical level.

Grosman (2000: 23) addresses the issue from a different angle. She points out that a translation produced by a non-native speaker is expected to be

> subjected to the reading, correcting and approval by a native speaker […] while nobody demands that a target language speaker's reading and comprehension of the source text be submitted to a similar testing and checking by a mother tongue speaker of the source text.

The target-language speaker's reading is taken for granted, she says, even though most target-language speakers of a major language such as English "command only a

rather limited knowledge and understanding of [less widely disseminated] languages". She asks the following important questions:

> Are the native speakers [of a major language into which translation is done from a minor language] supposed to indulge in the luxury of doing whatever they may deem necessary to adapt their translation to the target culture just in the name of its successful functioning? Are the intentions of the source writer/speaker and the particularities of the [source] culture really of so little importance as to merit no more attention? Or do such attitudes perhaps reflect existing asymmetries in power relations between widely disseminated and less widely disseminated languages? (2000: 23-4)

Campbell (1998: 22) also stresses the political and social asymmetry of source and target languages, putting it down to "the phenomena of immigration, colonialism, international trade and geopolitics." According to him, "in virtually any post-colonial society in the developing world where a major European language still has a foothold, there will be people who regularly write and translate in that language as a second language" (1998: 12). This has led him to describe the situation as one of "inevitability" of translation into the second language (1998: 22).

But that is not all. Cronin (2003: 144-6; emphasis in original) makes another important point when he stresses the dynamic aspect of the concept of "minority":

> "Minority" is the expression of relation, not an essence. […] The majority status of a language is determined by political, economic and cultural forces that are rarely static. All languages, therefore, are potentially minority languages. […] The hegemony of English in the fastest-growing areas of technological development means that all other languages become in this context *minority languages*. Major languages have much to learn from minority languages.

Thus a survey conducted among translators in Spain in 1998 showed that 84 of the 100 respondents translated out of their L1 "with certain regularity" (Roiss 1998: 378, cited in Kelly et al. 2003c: 46). Although the sample might be considered small relative to the number of translators in Spain, the survey suggests that the situation may be changing even when it comes to languages that were traditionally considered "major," such as Spanish. This is further supported by the results of another study (Schmitt 1990: 101, cited in Kiraly 2000b: 117-8)[1], carried out in Germany, in which respondents reported doing half of their work into non-mother tongues.

2.1.4   Croatia – a case in point

Due to its size and position, Croatia (population: 4.5 million) has always been a "translation culture". Over the past 15 years, in particular, the situation on the translation and interpreting market in Croatia has seen an explosion of demand, in both directions. Several factors have contributed to this change:

- Croatia's political independence (declared in 1991 and internationally recognized in 1992), which meant an inflow of diplomatic and other international institutions;

- The country's transition to a free-market economy, allowing an ever increasing number of foreign and multinational companies to enter the Croatian market, as well as allowing Croatian companies to try to expand their business abroad;

- The war in Croatia (1991-1995), which was covered by the international press and monitored by international institutions and agencies (the EC monitoring mission, the UN peace keepers, SFOR, etc.);

- The country's aspiration to join the European Union (from 1999 onwards), involving translation of thousands of pages of legislation and other documents in both directions.

All the agents mentioned above – foreign companies, diplomats, international institutions – have needed the services of translators and/or interpreters, which have been provided to a large extent by native speakers of Croatian. The few L1 speakers of foreign languages active on the Croatian translation market, the exact number of whom is unavailable, mostly work as revisers. Actual translation is mostly done by translators whose L1 is Croatian.

To our knowledge, the only study aimed at investigating translation and interpreting practice with regard to directionality in Croatia is Pavlovic (forthcoming). The study encompasses both translators and interpreters because, in the context of small markets such as Croatia's, many professionals work as both. We will summarize the background and the main findings of the study here as an illustration of what the situation might be like in a setting involving a language of limited diffusion.

The translator/interpreter profession is not very well defined in Croatia and there are no translator training institutions as such (the situation is changing at present with the Bologna process). Most people who engage in translation/interpreting hold a degree in modern languages (about 70% of all the 166 respondents in our survey whose L1 is

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reported to be Croatian) and many do translation/interpreting part time (a little over 50%). It is therefore very difficult to estimate the total number of professional translators/interpreters in Croatia and make strong claims regarding the representativeness of the sample of this survey. The figures that follow might nevertheless provide a perspective of the scale we are dealing with.

According to Odisej (2007), a business web portal, there are 82 companies in Croatia that list translation or interpreting as their main business activity. These companies may have one or two full-time employees only and use the services of freelances, sometimes students. Large national or international companies typically employ a handful of translators, as do ministries and other administrative bodies. The notable exception is the Ministry of Foreign Affairs and European Integration, which, in preparation for Croatia's accession to the European Union, uses the services of freelancers in addition to its 20-strong team of full-time translators (Prohaska-Kragovic 2004).

Table 1 shows the number of members in four major professional associations in the country (the first three figures are from the associations' websites, listed in the References section, while the fourth figure was obtained through personal communication).

Table 1 - Members of professional associations in Croatia

Association	No. of members:
The Croatian Association of Scientific and Technical Translators	circa 300
The Association of Croatian Literary Translators	207
The Croatian Society of Conference Interpreters	40
The Croatian Society of Translators for Television, Film and Video Distribution	circa 70

A degree of overlap among the members of these associations is likely. Furthermore, not all translators/interpreters are members of professional associations, and, conversely, many of those who are members of professional associations are not full-timers. The latter is especially true of literary translators, as one can apply for membership in the Association after translating just one book.

The questionnaire survey reported in Pavlovic (forthcoming) was conducted by snowball method among translators and interpreters in November/December 2005, receiving 193 valid responses. Taking into consideration the figures presented above,

this can be considered a relatively large sample. The good response was probably due to the fact that surveys are very rare among translators and interpreters in Croatia.

Of the 166 respondents with L1 Croatian, 127 reported their L2 to be English (4 bilingual and 123 non-bilingual respondents), 21 German (2 bilingual and 19 non-bilingual), 8 French, 5 Italian, 2 Spanish, 1 Swedish, 1 Portuguese (there were no bilinguals in any of these five groups), 1 Polish (bilingual). In addition, the following languages were reported as L3: English, French, German, Italian, Spanish, Russian, Slovene, Czech, Polish, Norwegian, Swedish and Danish. By far the largest group was that consisting of people who work with L1 Croatian and L2 English, without an L3 (60 respondents). Other significant combinations included Croatian-English-French (18), Croatian-English-German (16), Croatian-English-Italian (11) and Croatian-German-English (10). The remaining combinations were reported by fewer than 10 respondents.

Of the 123 non-bilingual respondents with L1 Croatian and L2 English, 61 reported to be full-time translators/interpreters. Of that number, 34 described their position as "in-house/staff," while the remaining 27 said they worked freelance. Of all the 61 full-timers, 13 said that more than 50% of their workload comprised interpreting assignments (4 staff interpreters and 9 freelancers). The rest were predominantly engaged in written translation.

The findings that follow are based on the data gathered from the questionnaires submitted by the 61 full-time translators/interpreters whose L1 is Croatian and L2 English, some of whom also work with a third language and none of whom is bilingual.

The findings show that, for 73% of the respondents, more than half of their workload consists of L2 translation/interpreting. As many as 32% of the total number say they translate/interpret into L2 *more than 80% of their time.* Only two respondents, both full-time subtitlers, report that they never translate into L2.

Asked about which direction they find easier, most of the respondents (44%) predictably say L1 translation/interpreting, but no less than 33% say L2 translation, with the remaining 23% finding no difference in difficulty.

One third of the respondents (21) say they actually *prefer* translating into their L2, a similar number to those who prefer the other direction (20) or those who have no preference regarding directionality (also 20). When asked at the end of the questionnaire to write whatever additional comments they might have concerning the direction of translation/interpreting, a number of the respondents touched on the reasons why they preferred work into L2. Some said they found this direction more challenging and

therefore more rewarding professionally. A simultaneous interpreter said she found it easier to make quick decisions while working into her L2 (English), because in that language she does not have as many options to choose from as she does in her L1. We will come back to these issues in Chapter 6.

Almost half the respondents (27 of the 56 who found this question applicable to their situation) reported no difference in rates of pay depending on the direction in which they translate/interpret. Of the remaining 29, however, only four say they receive a better rate into L1. Work into L2 seems to pay better for 45% of the respondents (explaining perhaps why some people might prefer this direction). This finding is in contrast with observations made by some authors, e.g. Snell-Hornby (1999: 110), who mentions "suboptimal fees" for L2 translation.

Surprisingly, as many as 42% of the respondents "agree" or "strongly agree" with Newmark's (1988: 3) statement cited above about translation into one's L1 being "the only way you can translate naturally, accurately and with maximum effectiveness" – a statement which is in such sharp contrast to their everyday practice.

This brings us to the next section, which deals with quality in L2 translation.

2.1.5   Quality issues in L2 translation

Does the practice of L2 translation, necessary in settings involving a language of limited diffusion, mean that the quality of translation/interpreting into a major language will be compromised? This, of course, is a subject for studies involving quality assessment in the translation/interpreting market, without which a definitive answer cannot be given. However, personal experience as a translator and translation teacher for 15 years would suggest that this is not necessarily so. The reason why L2 translation/interpreting may be satisfactory – rather than merely the only one available – could be that, as suggested by Gile (2005), the direction of translation is not the only variable involved in the overall picture. The level of L2 competence is obviously the most relevant factor. In minority-language settings, people have traditionally invested considerable effort in learning foreign languages. Examples of translators/interpreters who have mastered a major world language to the level of native or near-native competence are far from rare. As pointed out by Grosman (2000: 23) above, L1 speakers of a major language – apart from being few in number – rarely achieve near-native or native competence in a

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language of limited diffusion. Additionally, as was also mentioned above, the level of L1 competence of expatriate major-language speakers in minority-language settings may have been compromised through years of living in L2 environment. All these considerations blur the clear-cut the distinction between L1 and L2 major-language translators/interpreters, perhaps even tipping the scales in favor of L2 translators (cf. Beeby Lonsdale 1996: 15).

Apart from language competence, Gile points out that motivation and professionalism also play an important role. The type of text or interpreting situation is certainly another variable, as is the translators'/interpreters' familiarity with the topic. Preparation, in the case of an interpreter, and research skills in the case of a translator, are likely to make a difference in the overall performance. Given the possibilities of speedy documentation and access to specific corpora offered by the Internet, as Prunc (2003: 84) also points out, L2 translators can produce quality translations if adequately trained. Gile goes on to list working memory capacity (for interpreters) and the efficient use of electronic tools (for translators, but also for interpreters) among the variables that will jointly contribute to the final quality of the service.

We could add to the list the norms prevalent in a given culture (whether L2 translation/interpreting is considered acceptable in professional circles and among the users of the service), as well as the translators'/interpreters' training and previous work experience (whether it included translation/interpreting into L2 and to what extent). In addition, for certain areas of specialized (technical) translation/interpreting, "smaller" languages may lag behind in the development of terminology and terminology-related tools, which may make translation/interpreting into a technologically dominant language such as English less challenging than work into one's own language. Large monolingual corpora are also more readily available in major languages, which can facilitate translation into those languages even by L2 translators (cf. Stewart's remarks on the British National Corpus in 2000: 210). It is not always clear, however, to what extent professional translators are making use of these resources.

Most scholars dealing with the topic of directionality observe the relevance of the special position that English, as L2, holds as *lingua franca* of the globalizing world. Dollerup (1997), for example, speaks of "Danish English" which, like so many other types of international or global English, is "nobody's mother tongue". McAlester (1992: 292-3) observes that, when it comes to English, many texts to be translated "are not directed towards a specific culture; rather they are intended for international

consumption, to be read by Italians, Japanese and Arabs as much as by Britons and Americans". In such cases, he believes, the requirement that the translator should have a native-speaker competence in the target language "loses its significance". In his opinion, a translator who is not a native speaker of English may be in just as good, or even better position than a native speaker, to relate to an audience for whom English is also a second language.

2.1.6   Directionality in empirical research into translation processes

Most translators, translation teachers and translation scholars would probably agree with Campbell's statement that "the business of translating into a second language is *clearly very different* from translating into the first language" (1998: 57; emphasis added). But *how* exactly is it different? Campbell attempts to summarize the crucial difference in the following way:

> The two activities are in a way mirror images. In translating from a second language, the main difficulty is in comprehending the source text; it is presumably much easier to marshal one's first language resources to come up with a natural looking target text. In translating into a second language, comprehension of the source text is the easier aspect; the real difficulty is in producing a target text in a language in which composition does not come naturally. (Campbell 1998: 57)

This statement rings true, but it also raises a number of questions. Is it true for all language pairs and all types of text? Does it hold for all levels of L2 competence and translation competence? Do training or previous experience play any part? Are there other, just as important differences between the two directions of translation? Is it even possible to separate the translation process into two distinct "sides" or phases, those of comprehension and production? Kussmaul (1997: 243), for example, observed on the basis of his protocol studies that "the traditional notion that in the translation process we can distinguish two separate phases should […] be replaced by a model that leaves room for overlapping of the phases". And what is the best way to measure "difficulty" of the various aspects of the translation process?

A study in progress (Jensen and Pavlovic, forthcoming) aims to test Campbell's hypothesis by using an eye-tracker to look at the translators' gaze behavior in the source vs. target text sections of the screen. Pupil dilation is taken to be an indicator of cognitive

load, which, in combination with the number and duration of gazes, should help measure the difficulty of each "side" of the process in the two directions (involving Danish L1 and English L2). Subjects of various levels of L2 competence and translation experience are being tested to see if training and experience play a role.

Other empirical studies have focused on different features of the translation processes with regard to directionality. Lorenzo (1999 and 2002), for example, investigated "playing-it-safe" as opposed to "risk-taking" strategies, centering her discussion around the notion of uncertainty in translation out of one's L1 (Danish). The thrust of the argument is that, for translators into L2 (in her case, Spanish), the main difficulty consists in evaluating the degree of acceptability of their own product (1999: 121 and *passim*). To fight the uncertainty inherent in this situation, translators develop certain survival strategies, which she found to be mostly "goal-adjustment" or "playing-it-safe" strategies. She makes an important point by saying that the situation has a lot to do with the traditional way in which translation has been taught in the service of learning foreign languages (1999: 124).

In another study conducted in Denmark, the issue of directionality was not the central concern but the findings are nevertheless interesting. Investigating the effects of think-aloud protocols on the translation process, Jakobsen (2003: 72) included directionality as one of the variables "because it would be interesting to explore if verbalization (presumably mostly in L1) would affect L2 target text production differently from L1 target text production". He found that translation from L1 to L2 was about 16 percent slower for both groups of subjects (professionals and non-professionals) than the other way round. Text segmentation also varied according to language direction. Subjects were found to have "segmented the target text more often (per 100 source text characters) when translating from L1 to L2 than when translating towards L1" (2003: 93). Jakobsen speculates that the delay way caused by a "conflict between thinking aloud in L1 and simultaneously producing text in L2" (2003: 78).

In an earlier study, Krings (1986, cited in Kiraly 1995: 46) found that "most of the basic strategy categories were the same in both language directions, but the order of application of the strategies depended to a great extent on language direction." In his own study, Kiraly (1995: 90-2) provides very interesting extracts from interviews in which his subjects comment on their preferences regarding direction of translation.

Hansen (e.g. 2006), Tirkkonen-Condit (e.g. 2000) and other scholars have also conducted studies of translation processes involving both directions of translation, albeit without making direct comparisons.

More empirical research into the issue of directionality is badly needed if we are to construct more valid theoretical but also pedagogical models. As Lorenzo (2002: 85) observes, the lack of recognition that L2 translation has had at the international level is mostly implicit and evident in the fact that the better part of research into translation deals with translation into the mother tongue. Hansen et al. (1998: 59) point out that "so much theoretical work was concerned with translation into the mother tongue […] that many researchers who have constructed models of translation on the basis of findings produced by studies of translation into the mother tongue took it for granted that these could be generalized to apply to translation into the foreign language too." Campbell (1998: 1) makes a similar point when he says that "the problems that arise when an individual translates into a second language do not fit easily into the framework established by orthodox translation studies, which tends to assume that all translators work into their first language."

2.1.7   Directionality in translator education

One of the authors who aimed to provide a framework for the teaching of L2 translation is Beeby Lonsdale (e.g. 1996, 2003). For her, one of the most important aspects of L2 translation (Spanish to English) is "genre literacy in the foreign language" (2003: 158). An important aim of translator education should therefore be to develop the future translators' awareness of genres and the contrasts between genres in different cultures. She further stresses the increasing importance of translation into English as an international language, with all the "hybrid" genres that arise from it, combining "the norms of the English language with local pragmatic strategies" (2003: 159).

Rodríguez and Schnell (2003: 185) likewise emphasize the development of "textual competence", which is defined as "the ability to generate coherent, grammatically correct texts that are stylistically and pragmatically adequate regarding the purpose of the translation and the addressee". This competence, together with "documentary competence," can "make up for the insufficiencies in linguistic and pragmatic-discursive competences" (2003: 180). According to the authors, the level of

development of the latter two (sub)competences is what constitutes "the fundamental difference" between L1 translation competence and L2 translation competence (ibid.). They make some proposals as to how textual and documentary competences might be developed, but unfortunately without citing any empirical studies to support their claims.

Neunzig (2003) agrees on the importance of documentary competence in L2 translation but makes a case for what he calls "intelligent use of documentation sources". By this he means that the students should be advised to use the external resources, especially those made available by the new technologies, with due caution and only after all the internal resources had been engaged. He argues that L1 competence, the L2 translator's strong point, should be rallied in the service of preparing the *source* text before even beginning the process of translation proper. This preparation means "anticipating the transference phase by means of a 'intralingual translation,' using the translation techniques, procedures and 'tricks' (generalization, omission, elision, paraphrase, and so on) in the language of the ST, to speed up and ensure the success of search in the target language, normally a source of errors [in L2 translation]" (2003: 196-7). Neunzig believes that L2 translation can thus be made just as good or even better than L1 translation in the case of texts in which "fluency and linguistic beauty is secondary", such as "administrative, commercial, technical, business and legal texts" (2003: 192). He stresses, however, that he bases his "proposals for reflection" on his own experience rather than on systematic empirical studies.

Science and technology seem to be appropriate fields in L2 translation education for Aguilera (2003), who reports on a teaching experience using real translation commission from Spanish into English. The use of parallel texts, consultations with specialists and revision by a native speaker of English proved to be beneficial for the students, who were in this way also introduced to the professional market and all the responsibilities that go with it. Authentic L2 translation projects are also the focus of Kiraly's (2000a, 2000b) Social Constructivist approach to translator education. Kiraly points out that "the research over the past 15 years on cognitive translation processes has yet to demonstrate that translation skills per se are different depending on the direction of the translation process" (2000b: 116). He believes that the difference is "less one of translation competence than it is of translator 'confidence'" (ibid.). This confidence can best be built, in his opinion, in the context of collaborative learning in

which the students interact with each other in small groups, while focusing on the authentic translation tasks at hand (2000b: 122), with the teacher acting as a guide.

Narváez (2003) stresses the importance of developing the future translators' cultural competence but, with respect to L2 English, Snell-Hornby (2000: 37-8) points out that in the case of a world *lingua franca* the target readership can be difficult to define. She says that we "cannot always speak of a 'cultural transfer' as between two clearly defined and homogeneous language communities, but often of an information or knowledge transfer within the framework of a 'cultura franca'". In this respect, the L2 translation class should not be "a kind of language exercise which aims at testing foreign language competence [...] but part of the training for future professional life, and the texts and teaching methods should reflect this" (2000: 37). The types of text most likely to be translated into a lingua franca and most suitable for the learner are, according to her, informative texts "highly conventionalized both in verbal and non-verbal elements – such as instructions for use, public announcements or commercial correspondence" or scientific reports. Operative texts such as tourist brochures are recommended for advanced classes, while expressive texts are according to this author the least likely candidates for professional L2 translation.

Pedersen (2000: 113) is in agreement with the latter view, arguing for use of authentic, non-literary materials in class, such as "museum catalogues, scholarly articles, textbooks, etc." Mackenzie and Vienne (2000) likewise advise that the students be given realistic tasks such as those involving technical documentation, informative texts and promotional material, in which they can succeed in producing acceptable target texts. According to them, conventional text types, for which students can find parallel texts, are especially suitable. The use of parallel texts should be favored over dictionaries, as the former "provide more information of the type the non-mother tongue translator is likely to need than dictionaries, such as collocations, context of use, register, etc." (2000: 126).

Koberski (2000), on the other hand, tackles L2 translation of expressive texts, with special emphasis on the "implicit" in such texts. Reporting on an experiment involving students translating poems from their respective languages into L2 English, she focuses on the question of how to teach the students to "use their competence in uncovering the implicit in their mother tongue" (2000: 108).

Goodwin and McLaren (2003: 248-50) deal with an important aspect of L2 translator education, namely, the system of evaluating L2 translation. They argue that

the criteria for this direction cannot be the same to those used in L1 translation, and propose a system that focuses not only on the student's errors but also on those problems that were successfully dealt with. Kiraly (2000a, 2000b), on the other hand, argues for a type of exam in which traditional individual translation tasks are complemented by a simulated professional translation by the entire group working collaboratively. The translations are given to "an outside consultant, acting as the client, for assessment on the basis of suitability for publication" (2000b: 122). MacKenzie and Vienne (2000: 129-30) are also in favor of using real translation projects in evaluation, adopting Gouadec's scale of "revisable/unrevisable, acceptable, submittable". McAlester (2000a and 2000b) proposes editing time as an evaluation criterion, also in an attempt to bring university practice closer to real-world demands.

Based on the findings from an empirical study of pair translation processes, St.John makes a case for collaboration between students translating into L2 and native informants of that language. However, one of the main problems in many settings that use a language of limited diffusion is precisely the lack of available L1 users of major languages, making this recommendation hard to follow.

To conclude this section, we can cite Campbell (1998: 11-12), who makes a case for appropriate measures in education of future translators by saying that "the reality is that they [L1 and L2 translation] are different, and that such students need to be taught differently". This gives us a good reason to study the features of translation processes in the two directions more closely and more systematically. As pointed out by Lorenzo (2002: 88), the distinguishing features of translation into L2 are not observable if we consider solely the translation product (the target text), focusing on possible errors in the target language. Instead, she suggests research into translation processes as a way of investigating the specific features of L2 translation, with possible application to translator education.

2.2   Translation Processes

2.2.1   *The nature of translation processes*

If we are to embark upon an investigation into translation processes with a view to gaining insight into possible differences between L1 and L2 translation, we must first consider the nature of "translation process" itself. Malmkjær (2000: 163) points out that:

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

In translation practice, of course, the cognitive aspects are couched within the physical aspects, and their interdependency means that any attempt at neat separation for either research or educational purposes might be a bad idea. In his discussion of translation competence, Pym (2002: 9) states that "the kind of processes we are interested in are clearly as much social as they are cognitive". In a similar vein, Kiraly (1997: 139) presents his "doubly articulated view of translation processes: from the translator's perspective, looking outward toward the social situation in which professional translation occurs, and looking inward toward the mental processes going on in the individual translator's mind during the production of a translation". The two aspects are inseparable and, while particular studies will naturally tend to focus on one of these perspectives, it is important not to lose sight of the other. For example, while the focus of the present study of directionality has been to investigate some aspects of the "translation process" that takes place from the moment a group of novice translators starts working on the source text until they finish the target text (cf. Hansen 2003: 26), care has also been taken to provide information about the actual translation practice in Croatia with respect to directionality, and thus place the translation processes in their social context.

Even when we decide to examine only the cognitive aspects, the problem of delineating the "translation process" is not over. House (2000: 150; emphasis added) points out that, in using the term "process of translation", "we must […] keep in mind that we are dealing here not with an isolable process but rather with a *set* of processes, a *complex series* of problem-solving and decision-making processes […]". She goes on to say that we can look upon the "process" as "any number of operations" performed by a translator while converting a source text into a translation text. Attempts have been made to isolate the different sub-processes that make up the process of translation. Thus, for

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example, Breedveld (2002a and 2002b) lists the different (observable) activities that translators perform during the translation process, such as 'reading ST; commenting ST; evaluating ST; process plan; realize translation problem; producing TT [in 2002a: "formulating TT"]; writing TT; reading TT; evaluating TT". A distinction is further made between (sub)processes, behaviors and strategies, which will be discussed in more detail in section 2.2.2.3.

According to House (2000: 150), the selection and the sequencing of the various operations that make up the translation process is conditioned by "semantic, pragmatic, situation-specific and culture-specific constraints operating on two 'levels' – that of the source and that of the target language" – and also by "the emergent translation text itself both in its physical realization and its on-line cognitive representation" (2000: 150-151). Other authors, such as Breedveld (2002b: 99), also agree that "the many different factors that affect the evolution of a translation process make it hard to speak about 'the' translation process". Both House and Breedveld state that variability is an important reason behind this difficulty of speaking about "the translation process" – with the definite article and in singular. Breedveld thus stresses that "not only will individuals differ in the ways they proceed in order to produce a translation, but they may also proceed differently according to the translation task they are confronted with". Furthermore, "no two processes are the same, even though the task is the same" (Tirkkonen-Condit 2000: 123). Wilss (1996: 42) voices a similar opinion when he says that "translation is an activity that varies as we pass from one translator to the next, from one ST to the next, and from one TT readership to the next". Séguinot (1997: 104-105) elaborates this point by saying that:

> different text types require different approaches, different people can translate the same text in different ways […]. [D]ifferent levels of competence, familiarity with the material to be translated, as well as different interpretations of the nature of the assignment will lead to differences in processes and in the results. [E]ven more specifically, [there is] potential for variation within the individual, that is, the possibility of there being different pathways to access language, interpret it, and produce it.

Séguinot (1996 and 1997) explains the variability by describing translation as a "toolbox" rather than algorithmic skill. A toolbox skill implies that there is a variety of choices, which depend on a number of things, including "the nature of the assignment, the functions of the text, the translating ideology held by the individual or the institution

initiating the request, as well as the pragmatics of the translating situation" (1997: 109). A related way of looking at the problem is by describing translation as being an "ill-structured knowledge domain". For Spiro et al. (1992: 60 and elsewhere), ill-structured knowledge domains are those in which

> the following two properties hold: (a) each case or exa mple of knowledge application typically involves the simultaneous interactive involvement of multiple, wide-application conceptual structures (multiple schemas, perspectives, organizational principles, and so on), each of which is individually complex (i.e., the domain involves concept- and case-complexity); and (b) the pattern of conceptual incidence and interaction varies substantially across cases nominally of the same type (i.e., the domain involves across-case irregularity).

As a consequence of conceptual complexities and across-case inconsistencies, "the employment of prepackaged ('precompiled') schemas [is] inadequate and inappropriate" (1992: 64). Instead, in ill-structured knowledge domains "one must bring together, from various knowledge sources, an appropriate ensemble of information suited to the particular understanding or problem-solving needs of the situation at hand" (ibid.). The ways in which knowledge will be used in different situations are too different to be anticipated in advance. This chimes in with Tirkkonen-Condit's (2000: 123) observation that "it is typical of human translation that the exact details of the goal, i.e. the target text, are not known to anyone in advance. The goal gets its final shape in the processes that go on in the translator's head". Or, in the words of Shön (1987: 29), "a skilled performer adjusts his responses to variations in phenomena".

All these observations are important because they give us an idea of the complexity of "the process" researchers are trying to investigate. There have been various attempts to distinguish between the different aspects of the process and describe them on the theoretical level. Thus Holmes (1988: 96, cited in Hönig 1991: 77) describes translation as a multi-level process, suggesting that, "while we are translating sentences, we have a map of the original text in our minds and at the same time a map of the kind of text we want to produce in the target language". This map, or "a vision of an optimal target text" (Tirkkonen-Condit 2000: 125), "an idea of what the target text will look like" (Hönig and Kussmaul 1998: 175, in Hansen 2003: 28-29) or the translator's "expectation structure" (Kiraly 1995: 65 and 1997: 151, building on Tannen 1979) is seen as a goal in accordance with which individual decisions are made. The achievement of this goal, however, does not proceed in an orderly, linear fashion. In

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fact, there is evidence in empirical studies (e.g. Séguinot 2000) to support the claim that "the mental processes underlying translation […] leading to the target text occur in anything but a neatly organized *linear* fashion" (Neubert 1994: 415; emphasis in original). Séguinot (2000: 146 and elsewhere; emphasis in original) suggests that "there is *parallel processing*, meaning that the translator can be working on more than one item, structure, etc. at a time". She maintains that "all translation cannot be accounted for by a theory which likens the process to the biting off of a piece of text, chewing it, and spitting it out transformed" (2000: 146) and proposes another analogical explanation, one that she believes is "consistent with the non-linearity and iterativity in this data". She thus suggests that translation "involves a *managerial function* rather than a series of procedures" (2000: 147). We shall return to these concepts in more detail in 2.2.2.

Studies of translation processes have indicated that "translators sometimes translate 'automatically'; they feel a kind of 'flow' […] enabling them to find better solutions without great effort. At other times they have to spend a lot of time thinking about a possible solution for a translation problem" (Hansen 2003: 27). Sometimes translators seem to be able to control their processes "nearly automatically." On other occasions they encounter a lot of problems, making control a conscious act" (Hansen 2003: 28). Or, in the words of Neubert (1994: 416), "highly creative 'jumps' may alternate with 'run of the mill' routines". Kiraly (1997: 152) makes a similar observation, saying that "any translator working with any given text may process in a more-or-less intuitive and a more-or-less strategic manner, depending on familiarity with the topic, experience in dealing with similar texts in the past, the specificity of the task description, and so on." He observed the presence of what he terms "relatively intuitive" and "relatively strategic" processes in all the subjects he studied (1997: 149).

It seems, therefore, that the process(es) of translation can be described in terms of Shön's (1987: 26f) concept of "reflection-in-action". The notion refers to a situation in which "our thinking serves to reshape what we are doing while we are doing it" (1987: 26). Shön thus singles out a sequence of "moments" that are typically encountered in reflection-in-action. To begin with, everything goes smoothly; we rely on our spontaneous, routinized responses. At such moments, what he calls "knowing-in-action" (1987: 22f) is "tacit, spontaneous, and delivered without conscious deliberation; and it works, yielding intended outcomes so long as the situation falls within the boundaries of what we have learned to treat as normal" (1987: 28). But something may divert from the ordinary and produce an unexpected outcome, or a "surprise". This surprise, which

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characteristically gets our attention, leads to reflection "in the midst of action without [our] interrupting it" (1987: 26). Reflection, in turn, leads to on-the-spot experiment, in which we try out new actions, "test our tentative understandings of them, or affirm the moves we have invented to change things for the better" (1987: 28). The experiment may work, in the sense of producing a satisfactory result, or it may create more surprises that call for further reflection, and so on.

Shön points out that the moments of reflection-in-action are not as distinct as his outline would suggest, but they would typically be present in this type of reflection. What distinguishes reflection-in-action from other kinds of reflection is that it has immediate significance for the action that is taking place (and perhaps also for future situations that one comes to see as similar to it); it is integrated into the performance of the on-going task. What further characterizes reflection-in-action is that it is "at least *in some measure* conscious, although it need not occur in the medium of words" (ibid.; emphasis added).

The issue of conscious versus unconscious processing is indeed one of the central themes in research into translation processes. The fact that additional terms, such as "automatic", "routine", "non-routine", "intuitive", "strategic", "controlled" and "uncontrolled" are also used makes the situation even more complex.

Thus Hönig (1991: 80) distinguishes between the "controlled workspace" and the "uncontrolled workspace". The former is the "location where all those mental-cognitive processes take place which find their way into thinking-aloud protocols" (see 2.3.1). According to Hönig, the processes taking place in the two workspaces are "interdependent, and they are both (ideally) governed by a macro-strategy". As Kiraly (1995: 49) explains, Hönig "conceptualizes cognitive-intuitive processing chains, where controlled processes alternate with intuitive ones in a manner that is neither predetermined nor completely describable". Or, in Hönig's own words (1991: 81), "the terms intuitive/cognitive are not appropriate" in the sense of forming a dichotomy, "because of a phenomenon which I have termed cognitive/intuitive chains". The latter are "an uncoordinated sequence of intuitive and cognitive steps, so that the whole chain could be termed neither intuitive nor cognitive." Furthermore, according to Hönig (ibid.), the processes involved cannot be *properly* called subconscious, either:

> They are conscious in the sense that the translator knows that they are taking place and relies on them taking place "automatically." They are subconscious, however, in the sense that they

"happen" to the translator without him/her being able to give a detailed and complete account of them.

For Kiraly (1997: 151), controlled and subconscious processes do not necessarily form a dichotomy either. He prefers to speak of "relatively controlled vs. relatively automatic processes" (1995: 86-87 and elsewhere), explaining that "relatively uncontrolled processes were inferred in the translation of virtually every unit found in the data" (1995: 96). The model of the translator's mind that he proposes consists of (a) sources of information, including long-term memory, source text input and external resources, (b) the "intuitive workspace", which is relatively uncontrolled and subconscious, and (c) the controlled processing center, the relatively conscious mental space where strategies are applied (1997: 149). According to this model, two main products emerge from the intuitive workspace, tentative translation elements and translation problems. The former are "unverified products of spontaneous associations at the workspace level" (1997: 51). They can "either bypass the controlled processing center or be subjected to one of two types of monitoring: target language monitoring […] and monitoring of coherence with the translator's understanding of the original text". Translation problems, on the other hand, "emerge from the intuitive workspace when automatic processing is incapable of producing tentative translation elements. These problems are brought into the focus of attention in the controlled processing center, and a strategy is chosen and implemented in an attempt to deal with them" (ibid.). Strategies may involve sending the problem back to the intuitive workspace, and if this is unable to produce a solution that will match the translator's "expectation structure", a tentative element will be proposed. This element may be accepted or rejected, in which case the whole search procedure will begin again. Alternatively, the problematic element may be dropped altogether.

Is probably worth pointing out here that the exact nature of the relationship between conscious and unconscious (or nonconscious, as cognitive psychologists sometimes prefer to call it) mind is far from unambiguous. The notion that the conscious mind is "in charge" is not universally accepted in psychology. Metaphors describing the role of the conscious mind range from the one which conceptualizes it as the CEO, with the nonconscious mind likened to low-ranking managers or even janitorial staff, to the one which sees the conscious mind more in terms of a press secretary, who "can observe and report on the workings of the mind but has no role in

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setting policy and is not privy to many of the decisions made behind the closed doors of the Oval Office. It's an observer, not a player" (Wilson 2002: 46-47). Others still see the conscious mind as something in between, and have compared it to Ronald Reagan: "one can feel presidential, and indeed be presidential, but still be less in control than it seems from either the inside or outside" (2002: 48). This is without even mentioning those who suggest that the conscious mind may be an illusion (see e.g. Noë 2002).

2.2.2   Key concepts in research on translation processes

2.2.2.1   (Non)-linearity of translation processes

We are warned by Campbell (2001: 31) that "when we visualize mental processing models we tend to be seduced by the notion of serial processing that is so familiar to us from our knowledge of electronic computing." It has been suggested, on the other hand, that translation can proceed in a non-linear fashion. Thus Séguinot (2000: 146) found that "the progress of the translation is much more complex than a linear progression or even a series of procedures for arriving at equivalences where the structures do not coincide". Her study of translation processes of two professional translators who regularly work together showed that translation can be "*iterative*, meaning that though a translation is arrived at the mind continues to look for alternatives and comes back to the same item or structure […] certain terms are brought up over and over" (ibid., emphasis in original). Neubert (1994: 415; emphasis in original) expresses the same view when he says that "the mental processes underlying translation and the linguistic implementation leading to the target text occur in anything but a neatly organized *linear* fashion".

Other researchers have nevertheless observed the opposite to be the case. Kiraly (1995: 87) found that his subjects "progressed through the text in a basically linear fashion, producing translation solutions for individual elements as they appeared sequentially in the text. There was little backtracking to previous units in the source or target text." A very similar observation is found in Jensen (1999: 111): "The informants progressed through the text in a basically linear fashion, producing translation solutions for individual elements as they appeared in the text. Most editing during translation took place while the text element was still in focus." The fact that both of these authors use

the hedge "basically" points to the fact that the linear and non-linear opposition is not binary.

In comparative studies, researchers have nevertheless been able to observe that some subjects proceeded in a more (or less) linear way than others. Thus Krings (1986, cited in Kiraly 1995: 48) observed that the professional proceeded in a more concentric fashion through the text, as opposed to the linear progression of the nonprofessional. Tirkkonen-Condit (1997: 79; emphasis added), basing her observation on the studies by Jääskeläinen (1990), Krings (1988) and Laukkanen (1997), says that research has shown that "*ambitious* translators tend to work in a spiral kind of fashion: they do not try to solve all problems at once but leave problematic points open and come back to them over and over again until a feasible solution emerges". Dancette (1997: 102) observed that "the best performers have a larger range of avoidance strategies that allow them to go on with the translation and to set the problem aside. They come back to it as they are working on other segments".

It remains to be seen whether future studies will confirm the link between a higher instance of non-linearity and a higher degree of translation competence. There is also some indication that the nature of progression through the translation task may be linked to what Tirkkonen-Condit (2000) has described as "translator profiles". In her study, one of the subjects "gives the impression that his problem-solving takes place linearly" (2000: 129), while the protocols of the others include a lot of postponement strategies and are therefore less linear. All of the protocols she studied are described as representing "high-quality professional performance".

2.2.2.2 *Problems and units of attention*

Translation processes have been conceived of as problem-solving activities (e.g. Lörscher 1993; Tirkkonen-Condit 2000; Sirén and Hakkarainen 2002; Dancette 1997). Thus one way of looking at the various elements that the translator tackles during a task is in terms of translation problems. We can look at the number and type of problems encountered, and the ways in which these are dealt with. These problem spots are particularly interesting in research such as ours, which aims to improve translator training. For Pym, translational competence

"only really concerns situations in which there is doubt, in which there are alternatives, in which there is the possibility of rendering a term in more than one way. [...] Only in situations of doubt,

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when we have more than one available model, do we have to theorise in order to help us translate." (1993: 29)

As Sirén and Hakkarainen (2002: 76) explain, "in translation studies, 'problem' most often refers to different textual elements which cannot be translated without deliberation, if at all. […] 'Problem-solving', then, refers to such deliberation and rendering a textual element (or omitting it)".

The term "problem," however, might be laden with negative connotations. For this reason, some scholars argue that this focus on problems might have some adverse consequences. Thus Séguinot (2000:144) says that "labeling all points at which the translation seems non-automatic in the same way has the disadvantage of investing the source text with the difficulty". Jääskeläinen (1993: 102; emphasis in original) gives another reason for eschewing problem-orientedness: "The process features that seemed to illustrate the most significant inter-individual differences were not necessarily related to translation *problems* in the traditional sense". She wanted to include in her analysis those instances where attention was required, in which an "unproblematic" decision was made. This chimes in with Jakobsen's (1999: 15) view that "something that is not a translation problem is as interesting or uninteresting as something that is".

Instead of "problems", Jääskeläinen chooses "attention units" as a concept suitable for her purposes. Attention units are defined (1990: 173, cited in 1993: 102) as "those instances in the translation process in which the translator's 'unmarked processing' is interrupted by shifting the focus of attention onto particular task-relevant aspects". Thus translators can interrupt their "unmarked processing", defined as "effortless or uncontrolled processing, such a reading aloud the ST or producing a fluent, uninterrupted translation of a[n] ST item or passage" (ibid.), to make either a "problematic" or an "unproblematic" decision. "Problems" can here be seen to be a subset of "attention units". Kiraly (1995: 86) distinguishes between "problem units" and "nonproblem units". But for him, the former are those that "required cognitive attention and the application of conscious or potentially conscious strategies", while the latter are those "whose solutions came from intuition and spontaneous association, apparently without the intervention of problem-solving strategies".

All this, of course, is closely related to one's definition of "problem". We will now look at some of the definitions of "problems" and "attention units" found in the literature.

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For Lorenzo (1999: 128), problems are those elements "for which the translator presents more than one possible translation or whose solution is expressly reasoned or argued". This is very similar to Séguinot's (2000: 144) notion of "negotiated meaning", which she defines as "those instances where translation does not occur automatically. The translator is aware of the meaning in the source text and considers alternatives or actively chooses to deviate from the source text." But, she points out, "what it does *not* include is language learners' problems, i.e. the translator whose knowledge of the source language is inadequate" (emphasis added). However, the distinction between language learners' problems and other types of problems may not be as straightforward as this definition seems to imply.

Chesterman (1998: 141) cites Lörscher (1991: 79f), who in turn builds on Dörner (1976), as defining a problem in the following way:

> A problem is perceived by an actor to exist when (i) there is an undesirable initial state of affairs, (ii) a desirable goal state, and (iii) a barrier preventing the transformation of the initial state into the desired end state. The barrier may be (a) that the means of getting from one state to the other are unknown […], (b) that several means exist but the actor cannot decide which is the optimal one […], or (c) that the desired end state is only vaguely known or even unknown […].

Sirén and Hakkarainen (2002: 77) take their definition from Bereiter and Scardamalia (1993: 83), who characterize "problem" as "any non-routine purposeful activity" and according to whom "problem" does not necessarily refer to something serious or very difficult. This leads Sirén and Hakkarainen to ask an important question: "Can a task be a problem, if it can be executed effortlessly and fast, even more or less automatically?" As we pointed out above, for Jääskeläinen both problematic and unproblematic decisions interrupt the "unmarked" or "uncontrolled" processing, while for Kiraly, "nonproblem" units are dealt with automatically. Livbjerg and Mees (2002: 161) also define "problem" with regard to conscious awareness: "Our definition of a 'problem' is very broad, meaning only that the unit in question was raised to the level of consciousness." For them, "verbalization could thus be anything from the expression of worry or dissatisfaction concerning a chosen solution to proclaiming satisfaction with it". Comparing their findings with those of Krings (1986: 113), they remark that they also find "the interpretation of what constitutes a translation problem for a subject leaves us with a fuzzy problem/non-problem borderline" (Livbjerg and Mees 2003: 133).

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Sirén and Hakkarainen (2002: 77) further stress that, from the point of view of cognitive psychology, entire tasks – and hence the whole translation assignment – are regarded as problems. There are two types, "well-defined and ill-defined (also termed well-structured and ill-structured)". The former "can be presented unambiguously, have clear solution paths and most often only one correct solution". Translation tasks are "ill-defined problems in that commissions or assignments are not unambiguous with only one possible interpretation and solution" (2002: 77-78). In translation problems, "there are no clear solution paths from the initial to the final stage".

Shön's (1987: 4) discussion of "problems of real-word practice" seems useful in understanding the nature of such problems, which "do not present themselves to practitioners as well-formed structures". Instead, "they tend not to present themselves as problems at all but as messy, indeterminate situations". Taking an example from civil engineering, Shön suggests:

> When a practitioner sets a problem, he chooses and names the things he will notice. […] Through complementary acts of naming and framing, the practitioner selects things for attention and organizes them, guided by an appreciation of the situation that gives it coherence and sets a direction for action. So problem setting is an ontological process – in Nelson Goodman's (1978) memorable word, a form of worldmaking. Depending on our […] backgrounds […] we frame problematic situations in different ways.

He further explains that problematic situations often present themselves as unique cases that are not "in the book". What seems particularly applicable to translation is his point that "some problematic situations are situations of conflict among values". In such cases, "competent practitioners must not only solve technical problems […]; they must also reconcile, integrate, or choose among conflicting appreciations of a situation so as to *construct* a coherent problem worth solving" (1987: 6; emphasis added). This is similar to Bruffee's (1999: 57) observation in connection with medicine: "Nothing is a symptom until it is construed (that is, constructed) as a symptom".

For this reason, Livbjerg and Mees's (2002 and 2003) definition of a translation problem *or* unit as seen "from the perspective of the participating subjects" seems particularly useful:

> A translation unit is any word or phrase in the text, or any aspect of such a word or phrase, which is verbalized by any single participant and for which he or she expresses any degree of doubt

about its proper translation. For example, we found that a single [source text] word may in fact represent as many as *four* units. (Livbjerg and Mees 2003: 129)

These different units or problems can, as Bernardini (2001: 249) points out, be embedded in each other, so that "attention units are better defined in hierarchical rather than sequential terms, with smaller units being processed within larger units". For Nord (1997: 69 and elsewhere), "the text is seen as a hyper-unit comprising functional units that are not rank-bound, with each unit manifested in various linguistic or non-linguistic elements that can occur at any level anywhere in the text."

As Neubert (1994: 415) observes, "the translator's competence acts upon text segments of varying sizes". Thus size of attention units has been one of the features according to which protocols are analyzed. Kiraly (1995: 86) reports that "the majority of the units translated by the subjects were at the word and word string level. Only on rare occasions did the subjects consider linkages between sentences while translating. There were also few overt references to the text level." In analyzing TAPs of subjects involved in a subtitling task, Kovacic (2000: 107) found that they operated with "subtitle-length chunks" of text. Some researchers compared the size of units verbalized in the protocols of professionals with those of non-professionals. Lörscher (1993: 209; but cf. Kiraly 1995: 89-90) reports that the "units of translation", which he defines as "the SL text segments which as subject extracts and puts into his/her focus of attention in order to render them into the target-language *as a whole*," are "considerably larger among professional translators than among foreign language students." He explains that "the former mainly choose phrases, clauses or sentences as units of translation, whereas the latter concentrate on syntagmas and especially on single words". The difference between "phrases" and "syntagmas" is not defined.

In addition to size, units can be compared in terms of number (the overall number of units; the number of units verbalized in a certain measure of time) or in terms of type or level (e.g. lexical, morphological, syntactical).

2.2.2.3 Behaviors, strategies and actions/interactions

If translation is seen as a problem-solving process, the means for solving those problems are often conceived of as strategies. Thus Lörscher (1991: 76) defines a translation 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". For him, therefore, problem-orientedness, potential consciousness and goal-orientedness are the defining features of translation strategies. This view has been criticized by Jääskeläinen (1993: 106; emphasis in original) on two counts. One is that it is "clearly designed to describe *problem-solving* strategies, not unproblematic processing of the task". As we have mentioned above, Jääskeläinen found "unproblematic" processing, or making of "unproblematic" decisions just as interesting as problematic. For her, unlike Lörscher, unproblematic decision-making is also strategic behavior. Secondly, Jääskeläinen (1993: 109) shies away from describing strategies as "potentially conscious", as this is not always possible to measure. She points out that "while unconscious processing cannot be accessed via verbal report procedures, it can, however, be studied by observing behaviour".

Dancette (1997: 89) makes a distinction between strategies, behaviors and processes:

> We call *behavior* an action or a series of actions carried out by the subject whether or not they lead to a result. […] We call *strategy* a series of ordered behaviors, consciously called upon to solve a problem. For example, a systematic or purposeful exploration of the text to seek a second occurrence of a given term implies a strategy. […] We define *process* as a series of mental operations carried out by a subject, consciously or not, to complete a task.

She thus points out that, in studying verbal protocols, behaviors are the primary data. They are an indication of a process, but they do not describe its totality; they reveal only the "tip of the iceberg" (1997: 91). Strategies are seen as a subset of behaviors in that they are "ordered", "conscious", "systematic" or "purposeful".

For Kiraly (1997: 151), "strategies do not solve translation problems – they are merely plans that can be implemented in an attempt to solve problems". This view of strategies is similar to that of Chesterman (1998: 141): "strategies are ways of solving / plans to solve problems". For him, they "can be evaluated in terms of costs and benefits" (cf. Toury 1992). Chesterman further points out that strategies "often contain an element of optimality: a strategy is typically deemed to be a good way of solving a problem, an efficient way, the most appropriate way, or the like". Other authors point out that in some situations, the "optimal" way of resolving a problem might be to abandon the aim of achieving an "optimal" translation, such as in the case of "playing-it-safe" strategies (e.g. Lorenzo 1999). Tirkkonen-Condit (2000: 123; emphasis added) further stresses that, in translation, "tolerance of ambiguity and uncertainty is needed

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[…] for reconciling the optimal with what is *feasible*". The notion of optimality seems to mean slightly different things to these authors – the best, or the having best cost-benefit ratio.

Jääskeläinen (1993: 111) makes an important point that this optimality will be "subjective optimality", which "emphasizes the translator's central role as decision maker". We might add that collaborative translation tasks are likely to involve inter-subjective optimality.

Various authors have attempted to classify translation strategies. There is no need to present all the different classifications here. What is interesting are the concepts of "global" vs. "local" strategies (found e.g. in Lörscher 1993: 209; Jääskeläinen 1993: 115). In professional translators, global strategies chosen (explicitly or implicitly) at the beginning of the translation task have been observed to govern the local decisions. Non-professionals have been reported to focus more on "problems of a local kind […] whereas the professionals are primarily concerned with global, formulating problems" (Lörscher 1993: 209). What needs to be borne in mind, however, is that explicit verbalization of global strategies is likely to be present in protocols involving what is for the subject a non-routine task. In routine tasks, both professionals and non-professionals (e.g. advanced students or novices) may be governed by global strategies without feeling the need to state them explicitly. An analysis of the way local problems are dealt with can give better indication of the extent to which global strategies are implicitly evoked.

An example of classification of local strategies can be found in Séguinot (1996: 79f). According to her, local strategies "can be divided into four kinds, based on function: interpersonal strategies, search strategies, inferencing strategies, and monitoring strategies". Séguinot divides search strategies into external (use of external resources, such as dictionaries, the internet, etc.) and internal searches. In relation to internal searches, Kussmaul (1991: 95) uses the term "fluency" to describe "the ability to produce a large number of thoughts, associations or ideas for a given problem in a short space of time (Ulmann 1968: 45; Preiser 1972: 60)". Kiraly (1995: 48) mentions that "Krings's professional subject verbalized approximately twice as many options for translation units that did not end up in the final translation product than did the average student".

Regarding monitoring strategies, some researchers have observed that subjects with a higher degree of "translational proficiency" or more experience make target text evaluations that are more specific than non-professionals. Kovacic (2000: 101), for

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example, remarks that "more experienced translators were more specific and more articulate in their evaluative judgments, the protocols differed both in the quantity (or, more significantly, ratio) of evaluative versus other statements and the presence of an addressee". Tirkkonen-Condit (1997: 69) posits the following two tentative hypotheses: "that the proportion and specificity of evaluations of the target text increases with translational proficiency, and that expressives [expressive language] reveal attitudinal differences attributable to different levels of proficiency".

However, there are two reasons why we should be cautious about making assumptions that the specificity of evaluations correlates with the level of proficiency. One is that in the protocols on which these remarks are based, subjects with longer experience may have had higher stakes in terms of professional "face" (see our discussion of the social aspect of TAPs in 2.3.1.2). Kovacic points out that the presence of an addressee was more prominent in the protocols of more experienced translators. This is indication that their verbalization was, at least in part, intended for the benefit of the researcher and not solely an internal monologue spoken aloud. Tirkkonen-Condit's study also emphasizes the existence of an addressee. She points out herself that the "professionals and teachers approached the experimental situation as an opportunity to display their knowledge" (1997: 81). Furthermore, for teachers the greater specificity can be attributed to pedagogical habit, although Tirkkonen-Condit (1997: 78) argues against this conclusion.

There is another reason why it might be advisable to be skeptical about associating higher proficiency to more specific evaluative statements. Tirkkonen-Condit (1997: 76) says that "laymen and students tend to give judgement in terms of 'good' or 'no good', while professionals and teachers tend to specify their choices in more accurate terms". It could be argued that for high levels of competence, evaluations such as "good" or "no good" would often be "good enough". In other words, a highly-skilled practitioner would have an intuitive "feeling," based on years of experience with similar situations, a large amount of feedback received over the years, and the familiarity with translational norms. This feeling would tell them whether something is "good" or "no good" – further specifications may be a waste of time. If pressed for explanations, practitioners may be able to come up with some plausible explanations, which may or may not have to do with actual reasons for their "feeling" that something is "better" than something else. In part, this has to do with the way an individual has learned the

skill, i.e., how much rationalization and theorizing has been part of their training and work experience.[2]

González-Davies' model of competence development may be useful in this respect. She distinguishes four stages: unconscious incompetence, conscious incompetence, conscious competence and unconscious competence. At the third, "conscious competence" stage the learners "know when they are doing well and why. […] Decisions are made, and problem spotting and solving skills are developed along with a global idea of the task and its possible outcomes" (2004: 40). At the fourth, "unconscious competence" stage, however, "they do well but sometimes cannot explain why: most of the skills have been internalized along with the knowledge and strategies necessary for a top performance. Individuals vary in the extent to which they can "retrace their steps" from the last level backwards – a quality especially important for teachers of translation.

It seems likely that subjects who find themselves on the third level of competence, as defined above, might be able to have the highest awareness of their processes and therefore be able to explain the reasons behind their decisions in most specific terms. The same could be said of individuals who, although past that stage, are still able to retrace their steps. It seems reasonable to assume that there will be a lot of highly skilled translators who will not be as adept at justifying their choices. This may be especially the case of translators who have worked only, or mostly, into their L1 and have relied in their decisions on their "native competence" rather than on explicitly learned rules. Hansen (2003: 35) thus says:

> Over many years I have observed that it is much easier for our students to comment on and revise translations into a foreign language than translations into their mother tongue, and they prefer doing so. The reason might be that they have learnt the foreign language consciously, and have acquired the terminology to describe potential problems.

Or, as Bednar et al. (1992: 30) explain, "the ability to explain and defend decisions is related to the development of metacognitive skills, thinking about thinking". While metacognitive skills can certainly be assumed to help the development of cognitive skills, the two cannot be equated.

In any case, teasing apart strategic vs. non-strategic behavior will present the researcher with a practical as much as a conceptual problem. One way out of the

predicament seems to be to take a step backwards and leave "strategies" aside for the moment. Instead, the (translation) process could be described in terms of Strauss and Corbin's actions/interactions. For these two authors, working in the area of social science, "process" is described as

> […] a series of evolving sequences of action/interaction that occur over time and space, changing or sometimes remaining the same in response to the situation or context. The action/interaction may be strategic, taken in response to problematic situations, or may be quite routine, carried out without much thought. It may be orderly, interrupted, sequential, or coordinated – or, in some cases, a complete mess. What makes action/interaction process is its evolving nature and its varying forms, rhythms, and pacing all related to some purpose. (Strauss and Corbin 1998: 165)

Actions/interactions are responses – whether strategic or routine – to problematic situations which, when applied to translation, can be framed in terms of whole translation tasks or individual problems on the micro-level. Importantly, and this seems particularly relevant for the study of translation processes, "action/interaction evolves or can change in response to shifts in the context. In turn, action/interaction can *bring about changes* in the context, thus becoming *part of the conditions framing the next* action/interactional sequence" (Strauss and Corbin 1998: 165; emphasis added).

This section has tried to outline some basic challenges of defining the process or, more appropriately, processes of translation. They are alternatively – or even at the same time – social and cognitive, conscious and unconscious, routine and creative, controlled and uncontrolled. They are furthermore characterized by inherent variability on all levels. The problems that these features of translation processes pose for research methodology are the topic of the next section.

2.3 Methodological Issues in Research into Translation Processes

Investigation of translation processes has intensified over the past two decades largely due to the application of the introspective verbal reporting method known as think-aloud (thinking aloud) protocols or TAPs. The history, achievements and limitations of research employing this method have been discussed in the literature (see esp.

Jääskeläinen 2002, Bernardini 2001 and Tirkkonen-Condit 2002). Our interest here is only in the central issues concerning the methodology, in particular the criticisms that can be leveled against it. Subsequently, an alternative method – collaborative translation protocols (CTP) – will be discussed. Finally, other pertinent methodological issues will be raised, such as the choice of subjects and texts for the experiments, the use of video recordings and questionnaires, and the evaluation of target texts used in research. But first, let us have a look at think-aloud protocols as a method of data collection in the investigation of translation processes.

2.3.1 Think-aloud protocols (TAPs)

Think-aloud protocols, also known as concurrent verbal reports, are a method of data collection in which the subjects are asked to "think aloud," i.e. to verbalize their thoughts concurrently with cognitive processing (Ericsson and Simon 1984/1993: xiii). The criticism that is usually directed at this method can be summed up in the form of the following questions, which have been discussed by Hansen (2005):

1. What is the relationship between the protocols and the actual mental or cognitive states that they purport to report on? How much of what is going on in the subject's mind do they tell us, and what kind of information do we get?

2. Does the concurrent verbalization method affect the processes it sets out to study, and if so, in what way?

3. Is it "natural" for one to think aloud, or talk to oneself, while translating? If not, what does this mean for the environmental validity of the studies conducted in this way?

    These questions will now be addressed in turn.

2.3.1.1 Completeness of TAPs

As we saw in 2.2.1, a part of the translation process is commonly regarded as being unconscious or at least automated. Are those unconscious and/or automated processes accessible to the subject and therefore verbalizable? In other words, as Shön (1987: 31; emphasis in original) points out, "it is one thing to be able to reflect-in-action and quite another to be able to reflect *on* our reflection-in-action so as to produce a good verbal description of it". Psychologists (e.g. Polanyi 1964, cited in Nisbett and Wilson 1977:

247) have described this phenomenon as "knowing more than we can say". Others have studied the "schism between what people do and what they say" (Wilson 2002: 58), and even warned that sometimes we "say more than we can know", as is the case in *post hoc* rationalization (Nisbett and Wilson 1977).

The proponents of the think-aloud method Ericsson and Simon (1984/1993: 15) admit that automation speeds up the processes and makes the "intermediate products unavailable to STM [short-term memory], hence unavailable also for verbal reports". In other words, only information in "focal attention" can be verbalized. According to their model, it is the "central processor", which controls and regulates the non-automatic cognitive processes, that determines what part of the information finds its way into STM. This is the information that is "heeded" or "attended to". The information that is heeded during the performance of a task is the information that is reportable (1984/1993: 167 and *passim*). Ericsson and Simon stress that "with increase in experience with a task, the same process may move from cognitively controlled to automatic status, so that what is available to the novice may be unavailable to the expert" (1984/1993: 90). This becomes particularly relevant for translation studies interested in the behavior of professionals or experts, whether for didactic purposes or in the interest of testing theoretical models. We shall return to this issue in our discussion on the choice of subjects in experimental studies (2.3.7).

Both the critics and the advocates of the think-aloud method agree that only conscious processes can be verbalized. The problem is, however, that not even all the information that *is* "heeded" will surface in the reports. The reason for this is that "thought in non-oral form can proceed much faster than speech" (Ericsson and Simon 1984/1993: 247). As one of the subjects in Kiraly's (1995: 94) study observes, "when I think something, I think it only for a second or so, but it might take fifteen seconds to say, and during that time I've kept thinking […]. So there are many things that I didn't say […]". However, Ericsson and Simon claim that "concurrent verbalization […] will produce verbalization of at least a subset of the thoughts heeded while completing a task". In their view, thinking aloud protocols

> can reveal in remarkable detail what information [the subjects] are attending to while performing their tasks, and by revealing this information, can provide an orderly picture of the exact way in which the tasks are being performed: the strategies employed, the inferences drawn from information, the accessing of memory by recognition. (1984/1993: 220)

They conclude that these reports are "most likely to yield direct evidence of cognitive processes" (1984/1993: 30), pointing out that the accuracy of verbal reports will depend on the procedures used to elicit them and specifying the conditions under which this will hold. Extreme caution seems advisable, however, when it comes to conclusions about the relationship between the reports and the processes. What appears in consciousness – and therefore also in the reports – is "the *result* of thinking, not the process of thinking" (Miller 1962: 56, cited in Nisbett and Wilson 1977: 232; emphasis in original). When it comes to studies of translation processes, Toury (1991: 59; emphasis in original) also warns that "it would be wrong to maintain that it is any *direct* access to the mental process which is provided by this [TAP] technique. Rather, the analysis is applied to *products* again, the protocols". While agreeing that the reports cannot be equated with the underlying processes, most proponents of the TAP method in translation studies hold that they can still be a useful tool for studying those processes, as they give us at least some clues of what goes on in the translator's head while translating.

Toury (ibid.) is also concerned about "the possibility that, during the verbalization, *activities of various types interfere with each other*", which brings us to the second important issue regarding think-aloud protocols: do they affect the processes under investigation?

2.3.1.2   *The effect of TAP on the processes*

If Ericsson and Simon (1984/1993: 30; emphasis added) are to be believed, "the concurrent report reveals the sequence of information heeded by the subject *without altering* the cognitive process". However, they warn that this will be contingent upon the circumstances under which the verbalizations are induced, in particular the instructions the experimenter uses: "When the instructional procedures conformed to our notion of Level 1 or Level 2 verbalization, the studies gave no evidence that verbalization changes the course or structure of the thought processes" (1984/1993: 106). By Level 1 verbalization they mean "direct" verbalization that occurs when "information is reproduced in the form in which it was heeded" (1984/1993: 16). Level 2 involves "recoding into verbal code […] when the internal representation in which the information is originally encoded is not a verbal code [and] has to be translated into that form" (1984/1993: 18). The latter would not include any "intermediate scanning or

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filtering processes" or "intermediate inference or generative processes" (which would belong to Level 3 verbalization). More precisely,

> an explanation of thoughts, ideas, or hypotheses or their motives in not simply a recoding of information already present in STM, but requires linking this information to earlier thoughts and information attended to previously. Level 2 [and, obviously, Level 1] verbalization does not encompass such additional interpretative processes.

As a consequence, the subjects are discouraged from explaining or justifying their behavior, as this kind of information can "change the sequence of heeded information" (1984/1993: 19) and therefore the processes themselves. Séguinot (1996: 76; emphasis in original) points out that "this *preparation* of subjects to warn them not to comment on what they are thinking has remained a key element in how psychologists evaluate protocol research results".

However, the instructions that explicitly warn the subject against explanation and verbal description may themselves affect the process in ways that are impossible to predict or account for. As Hansen (2005: 517) points out, "even this process of 'having to leave out some kinds of thoughts' must have an impact on verbal reports". Or, according to Séguinot (1996: 88), "warning subjects against thinking about what they are doing to ensure that they are verbalizing their thoughts in traditional think-aloud studies […] may lead to self-censorship."

When it comes to use of TAPs in research into translation processes, two further questions need to be asked. The first is whether it is possible at all, in such complex tasks as translation, to prepare the subjects to ensure that only Level 1 and Level 2 verbalizations will be present in their protocol. Frequent in the literature are comments such as that made by Jääskeläinen (1993: 114; emphasis added), who says : "after writing the sentence down Emily *justifies her choice* by pointing out that this kind of a (colloquial) expression can be used in this particular column […]". According to Ericsson and Simon, this would invalidate the protocol results, as the verbalization commented on clearly belongs to what they term Level 3 verbalization. The second question is closely related to the first. Let us suppose the subjects *are* able to refrain from explanations and justifications of their choices (which may not be the case due to any number of reasons, from the complexity of the task to the way the subjects were

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taught or their professional habits). Are we not interested in their explanations and the reasons behind their choices?

But let us return to Ericsson and Simon's instructions aimed at ensuring the validity of the protocols. According to them, not only explanations, descriptions, justifications and rationalizations – all of which are seen as socially motivated verbalizations – but any kind of social interaction during the think-aloud session is also strongly discouraged, since "social verbalizations may be quite different from the sequences of thoughts generated by subjects themselves while solving problems, performing actions, and making evaluations and decisions" (1984/1993: xiv). There are several problems associated with this premise. One lies in the fact that the very circumstances of research constitute a social situation. Even if the subjects "forget" the existence of the experimenter on the conscious level, we cannot be sure that their verbalizations are not censored, at least unconsciously. This is especially true if the experimenter is physically present in the room, and if they remind the subject to "keep talking", as advised by Ericsson and Simon. Although the researcher is advised to sit behind the subject (Ericsson and Simon 1984/1993: xiv), "the subject is made aware that it is a social situation of some kind in which they are participating. Such reminders must act as a thought-provoking impulse and their impact on the translation process cannot be evaluated and by no means controlled" (Hansen 2005: 518). Thus Séguinot (2000: 147) believes that "think-aloud protocols may be unconsciously edited as the translator is aware of the interest in the translation process". Similar concerns have led Fraser (2000: 115) to observe that "our presence [during think-aloud experiments] means in practice that the resulting discourse bears many of the hallmarks of speech and conversation". Hansen (2005: 518) points to another inconsistency in the exclusion of the social dimension. "It does not make much sense," she says, "that the social factor should be perceived as problematic *during* the experiments, when *after* the experiments with TA, it is the experimenter who has to interpret the verbal reports." After a thorough appraisal of think-aloud methodology drawing on findings from psychology and neurology, she concludes that the answer to the question if TA can influence cognitive processes and also the translation product "can only be 'Yes'."

Few empirical studies have been conducted with the explicit aim of testing the think-aloud methodology and its effect on the translation process. An exception is a study by Jakobsen (2003). Using Translog (2007), a computer program that records every key stroke executed during the process of translation, he found the following:

> [T]hinking-aloud delayed translation by about 25%. No significant effects on revision were found. However, contrary to expectation, significant effects on segmentation were discovered. The think-aloud condition forced both groups of translators [semi-professionals and professionals] to process text in smaller segments. (Jakobsen 2003: 70)

Interestingly enough, in other subjects "the TA [think-aloud] condition appeared to provoke more semantic changes during revision and to have a *positive* effect on content revision. This suggested that audible feedback from the subject's own verbalization […] might have a positive effect on translation quality" (2003: 80). Jakobsen's study thus indicates that the influence of thinking aloud on processing in translation is "quite considerable". His study does not provide any conclusive evidence on the basis of a relatively small sample, and he concludes that these findings do not invalidate the method. He proposes combining quantitative computer-logged data – gathered by means of what he dubs "type-along protocols" – with qualitative think-aloud data gathered in the traditional way.

The notion that it is possible to exclude the social component from one's cognitive processes could be challenged on a more philosophical level. Although Ericsson and Simon (1984/1993: 64) voice skepticism of Watson's (1920) proposition that thought is internalized speech, there are those who believe "we can think because we can talk with one another" (Bruffee 1999: 134). Without venturing too far into the debate on the social nature of language, we can nevertheless notice the dialogical nature of some think-aloud protocols. Consider, for instance, these observations by Tirkkonen-Condit (1997: 73):

> [T]here were quite a number of instances which seemed to be addressed to somebody outside […]. Those statements which contained an evaluation of the subject's own performance or of the subject him-/herself seemed especially prone to have an addressee-orientation.

Elsewhere she comments that "[one subject's] 'conversation' is more dialogical [than the other's] and gives the impression that she is collaborating on this project with a companion" (Tirkkonen-Condit 2000: 131). If this is indeed the case, it might more profitable to create translation tasks involving *real* collaborative partners. More will be said about this in 2.3.2, after another criticism of TAP has been dealt with.

2.3.1.3 Environmental validity of TAPs

As Salmi (2002: 85) points out, "thinking-aloud has also been criticized for being unnatural, because in a normal working situation one does not continuously talk to oneself". Thus House (2000: 159) observes that "the analysis of […] think-aloud protocols left me with a general déjà vu impression that the talk generated appeared to me often slightly 'un-natural' and forced". Kussmaul (1991: 91) similarly states that "thinking-aloud protocols are usually monologues, with the disadvantage of creating a somewhat artificial situation. Normally, when one translates one does not talk about what one is doing".

While these remarks sound reasonable, there are also contrary views. Kiraly (1995: 93) points out that "several subjects mentioned that they regularly talk aloud to themselves when they translate at home" and Krings (1987: 166, cited in Toury 1991: 59) went as far as to say that "thinking aloud while translating is an almost natural type of activity to which most of the criticism leveled at verbal report data does not apply".

Séguinot (1997: 107) points out that what is at stake is "the authenticity of the behavior captured". She explains that "the emphasis on a natural environment stems from a concern that the experimental situation can skew the results of a study" (1997: 106). In her own research (1996) she tried to find a naturally occurring instance of translating involving more than one person. Other scholars, such as Kussmaul (1991) and House (1988), made similar attempts by setting up translating situations that involve dialogue. But Jääskeläinen (2000: 78) warns that arguably "asking two (or more) people to translate together is just as artificial a translating situation as a think-aloud experiment, since most translators (students and professionals alike) work alone". In search of naturalness of one kind (talking to someone else vs. talking to oneself) the other kind of environmental validity (real-life relevance) should not be neglected. Naturally occurring instances of collaborative translation, that is, translation involving more than one person working jointly on the same source text, would thus provide a possible source of authentic data.

In the following section we will examine more closely the collaborative translation protocol as a method of data collection in research into translation processes.

2.3.2 Collaborative Translation Protocols

Protocols involving more than one person have been termed "joint translation protocols" or, in the case of pairs working together on a task, "dialogue protocols". We would like to propose a common term for the method: "collaborative translation protocols" (CTP). These protocols are a product of collaborative translation tasks, i.e. those tasks in which a pair or group of people translate the same source text together, basing their decisions on mutual consensus. In such tasks, the construction of the source text meaning and the emergence of the target text are a result of individual cognitive processing, as well as the interaction among the members of the group.

Some advantages and disadvantages of CTPs will be discussed presently.

2.3.2.1 Advantages of CTPs

Most advocates of collaborative translation protocols point out that "this is a more natural situation since there is a real partner to work with and one does not talk only to oneself" (Kussmaul 1991: 91-92). House (2000: 159) thus argues for what she calls "dialogic think-aloud tasks," in which subjects might engage in "more 'natural', less strained and less pressured introspective exercises that resemble 'real life' activities much more than the laboratory-type individual thinking-aloud practices". The need to talk arises not from the instructions given by the researcher (who need not be present at all), but from the collaborative endeavor itself: "here is the need to explain and justify one's translation, to make suggestions for improvement, to ask for advice and criticism, all of which are features of natural discourse" (Kussmaul 1991: 91-92). Or, as Séguinot (1996: 88) says, "in a standard protocol analysis subjects are constrained to think, but not justify their thinking. In the natural discourse situation where both subjects were responsible for the task, the translation was negotiated, sometimes with overt reasoning." According to her, these rationalizations do not invalidate the approach as they arise naturally from a real-life task, and are not "a construct of the experimental situation".

According to Barbosa and Neiva (2003: 152), the dialogue protocol, "owing to its very interactive nature," compels the subjects to "express, comment on and even justify their strategies in the process of negotiating solutions for problems without the need for external intervention or prior training in the think-aloud technique". While it may be true that for experiments involving collaborative tasks the subjects need not be trained in any research-related technique, some experience in collaborative translation might be

desirable. The success of a collaborative session is not a given, especially considering the issues related to group dynamics, which are discussed in more detail below. Putting two or more people who have never worked together before in an experimental situation involving collaboration may produce wonderful results just as easily as end in a complete disaster (or anything between the two extremes). A definite advantage of Séguinot's study is that she was able to find people who regularly work together. Likewise, the subjects who took part in our present study had worked together on collaborative tasks for some time before the experiments, in translation classes. As a consequence, they were well used to it and no further training was required. For them, the experiments were a rather natural situation (insofar as any experiment can be "natural").

Apart from the fact that data tends to be more spontaneous in CTPs than in TAPs, it also tends to be more plentiful, and perhaps richer: Séguinot's study "makes use of the dialogic situation to increase the amount of verbalization in the think-aloud protocol" (Séguinot 2000: 145). Likewise, House (2000: 159) observes that the "introspective data produced by pairs of subjects were generally less artificial, richer in translational strategies and often much more interesting".

Séguinot (2000: 146) remarks that collaborative settings have a further advantage of allowing us to see "the integration of world knowledge with [the translators'] understanding of the text as they argue for particular versions". In other words, they "show how meaning is gradually built during a conversation" (Salmi 2002: 86). If we conceive of all writing, and hence translation, as a form of "displaced conversation" (cf. Bruffee 1999: 55), the findings based on CTPs may well prove to be relevant for individual, not only collaborative translation processes. For the time being, however, this remains an assumption.

It is clear that collaborative translation protocols are *not* think-aloud protocols in the strict sense, although they may contain verbalizations that meet Ericsson and Simon's requirements discussed above. In each collaborative translation task, individual members are interacting socially with one another, but also "thinking aloud," i.e. verbalizing their thoughts as they arise spontaneously, toying with different ideas, letting their minds wander. However, and in this we agree with Séguinot and the others, the very things that invalidate CTPs in terms of Ericsson and Simon's criteria may be the very things we would *like* to find out about the translation processes, for instance, how and why translation decisions are made.

2.3.2.2 Disadvantages of CTPs

Collaborative translation protocols are not without their own problems. The most important one has already been discussed, namely the fact that they do not meet the requirements posited by Ericsson and Simon and can therefore not be considered think-aloud protocols in the strict sense. They involve a considerable degree of rationalization (justification, explanation, etc.). They are also likely to be affected by the social aspect of the situation. Depending on what we are investigating, we may decide to turn these weaknesses into assets, but they nevertheless need to be mentioned.

Another problem that is reported in the literature is related to the psychodynamic interaction processes that take place between the subjects. Séguinot points out that the subjects have an interpersonal relationship to maintain, while Kussmaul (1995: 11-12) warns that one of the subjects may become a leader "not because of his or her superior capabilities, but because of personality features". Likewise, a subject may "hold back his or her ideas for reasons of politeness". Barbosa and Neiva (2003: 151) make similar observations. Indeed, according to psychologists, people's decisions are sometimes guided by what they call a "feel-good" criterion. Depending on the cultural norms, social situation, and/or personality traits, this may take the shape of either exaggerating one's superiority over others, or else exaggerating their commonalities with group members (Wilson 2002: 38).

It has to be stressed that in (individual) think-aloud studies, in spite of Ericsson and Simon's admonition that the social component should be excluded at all cost, there is indication (e.g. Jakobsen 2003; Tirkkonen-Condit 1997) of subjects engaging in similar "tactics" in an attempt to save face or manage uncertainty. This supports our view that social factors are inevitably present in any kind of research, individual or collaborative, although admittedly to varying degrees. These "tactics" often operate on non-conscious level, and post-process elicitation procedures such as interviews or questionnaires may not always reveal everything. Complementing the CTPs with introspective data nevertheless seems necessary if we are to get a better insight into group dynamics involved in this kind of research.

In our pilot study involving collaborative translation (Pavlovic 2005), the post-experiment questionnaire asked the subjects to rate, on the scale of 1 to 5, the collaborative session along several parameters judged to be relevant for group

dynamics. These included the "relations in your team" (ranging from "very conflicting" to "very cooperative"), the "atmosphere" (ranging from "very dull" to "very creative"), and the subjects' satisfaction with the "way your team worked" (ranging from "very dissatisfied" to "very satisfied"). They were furthermore asked about how much they felt they contributed toward the final version of the translation, whether the other members of the team did their share of the work, if they had an opportunity to say what they wanted, if the other members of the team listened to what they had to say, if their suggestions were accepted for the final version and, if not, were they happy with the solutions that their colleagues decided on. In addition, there were some open-ended questions in which the subjects could write further comments. All of the nine subjects who took part in the pilot study used this opportunity to comment on some aspect of group dynamics. Diana [all names are fictional] thus admits: "I kind of had the feeling sometimes that I was pushing too hard with the suggestions that I liked," but another subject in her group says (emphasis added): "We were open to all suggestions and *no one* tried to put their solutions in front of everyone else's". In the same group, the third subject expresses her satisfaction with "the way we 'respected' each other's opinions and fully collaborated. I […] didn't feel insecure". In another group, a subject remarks that "the work in group depends on the participant's character, and I had the impression that Mirna was less frequently in the spotlight than Ana and I." But Mirna herself observes: "We worked together many times before so we function well as a group". The first subject, Jasna, says: "Sometimes one of us preferred one translation (hers) but had to compromise," and Ana remarks in a similar vein: "Sometimes you simply have a different opinion and don't agree with your colleagues, but not everything can always go smoothly […]. It was fun working together like this." In the third group, two subjects express their satisfaction with the way things went: "Everyone's ideas were considered and discussed, everyone had a 'duty', organization was good," "the division of work was great". But the third subject expresses reservations about one of her colleagues' knowledge, admitting also that they do not get on well outside class. In the actual protocol, her irritation with the other is sometimes apparent; without her comment it would have been difficult to explain. Alternatively, protocols may display a great deal of what the researcher may perceive as "confrontation" or "argument," while in actual fact this may not be how the participants see it. In some cultures, social situations, and perhaps age groups, such confrontation need not necessarily spell conflict or animosity.

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The first-person perspective provided by the questionnaires can thus help the researcher interpret the results obtained from the collaborative protocols (see Chapter 6).

Another criticism leveled against CTPs is that in professional translation practice, people do not *usually* work collaboratively on the same text. Teamwork, increasingly frequent among professionals, usually entails a division of labor, whether by sectioning the text or by dividing the roles (e.g. a terminologist, a reviser, project manager, and so on). Therefore, environmental validity of studies involving CTPs might be questioned. Jääskeläinen (2000: 74) warns that to conclude that CTPs are a better source of information about translating would be "premature, since the studies in which the two types of data have been compared contain other variables which may account for the differences between the two experimental conditions."

It remains to be seen to what extent it is possible to make generalizations about one condition (individual translation) on the basis of the other (collaborative translation), or indeed about "translation processes" as such on the basis of either TAPs or CTPs. For now, we still have reason to assume that the experiments with either TAP or CTP offer a valuable insight, albeit incomplete or indirect, into those processes. While it is true that CTPs may not necessarily be a *better* source of information than think-aloud protocols, they are certainly an *additional* source.

The use of CTP as a research method seems to be particularly suited for studies aimed at improving translator education, such as the study we are reporting on in this dissertation. While studies involving collaborative translation that happens in the learning context may or may not tell us something about the processes in the minds of individual professional translators, they will certainly help us understand better the social, as well as cognitive aspects of acquiring such a complex skill as translation.

2.3.2.3 *Group size in CTPs*

Research has shown that effective group size is relative to the type of task (Bruffee 1999: 26). For the translation tasks involving short, non-domain specific texts, groups of more than three members seem to be too large, as non-domain specific texts are not likely to involve a clear division of labor (e.g. terminology management). It could also be argued that in groups of four, some subjects might not have the opportunity to speak their minds, or that the subjects might speak over each other, which would make the transcribing of (parts of) the sessions difficult or impossible.

The collaborative translation protocols from our pilot study (Pavlovic 2005), which involved three groups of three members each, showed that in each group two people tended to talk more than the third. On the other hand, this third person did have an important role to play. In one group, for example, she was the one writing. In the other, the third person often asked questions, or made the others return to the source text when she thought they had drifted too far away from it. It was also easier for them to make decisions in groups of three than it would have in pairs or fours, as they couldn't get stuck in a 50-50 stalemate. Having a third member make a decision when two had conflicting opinions seemed to go a long way to defusing potential tension in the group. Groups of three are not without justification in the literature on collaborative tasks: "Working groups, especially long-term working groups, seem to be most successful with three members" (Bruffee 1999: 26).

2.3.3   The use of video recordings

Before the advent of audio technology, in order to record verbal protocols an observer had to be present and take detailed notes. The notes were often incomplete and there was a considerable margin of error. Later, researchers started to use tape recorders. Today these are usually digital recorders, which provide better quality of sound and facilitate storage. Apart from audio recordings, some experimenters have also used a video camera to register the subjects' behavior. This has been done to complement the think-aloud protocols and provide a more detailed picture "by the confrontation of introspective data with empirical observations of the subject's nonverbal behavior registered on videotape or in detailed field notes" (Barbosa and Neiva 2003: 143). But, as Kovacic (2000: 102) points out, "videotaping the experiment […] leaves the researcher with the same problem of identifying non-explicit messages and classifying e.g. facial expressions, nods of approval and disapproval, etc." Another problem with video recordings is that "the translation process may become unnatural when it is being taped. If the subjects cannot ignore the video camera, they may feel that they are being observed and consequently change their behaviour" (Hansen et al. 1998: 63). Occasionally, a video camera was used to capture changes in the translated text, and was therefore pointed at the computer screen, not at the subjects (e.g. Séguinot 2000: 145). Today this can be done by screen recording programs, many of which are freely

available on the web. Bernardini (2001: 255-6) points out that if validity of a TAP study is to be ensured, the least invasive environmental conditions have to be set up, and this means "renouncing the wealth of information provided by video-recordings so as to check the well-known tendency of subjects to monitor their verbal performance more carefully in this condition". Instead, she suggests techniques such as eye-movement tracking and sound recording, as well as use of computer programs that record keyboard strokes performed by the subject.

Interestingly enough, a study (reported in MacIntyre and Gardner 1994) in second language acquisition, in which a video camera was used to arouse anxiety in a group of students, found no significant differences in self-reported anxiety between that group and the control group. Although other studies have produced different results, this at least warns against taking for granted the anxiety-inducing effect of video recording. The level of anxiety can be reduced by setting up the experiment in a relaxed environment. Thus Hansen (2006) reports, based on her studies, that there might be a greater stress factor involved in the experiments at the office compared with those conducted at home.

In our pilot study (Pavlovic 2005), collaborative translation sessions were recorded on digital audio equipment. The recorder used was tiny, and was therefore relatively easy to ignore and "forget" about. The recordings show that the subjects were very relaxed; there is a lot of talking, laughing and an occasional swear word that they would have not used in front of the researcher. However, at the transcribing stage two problems emerged. One was that, although the speech is relatively clear and it was possible to tell what the subjects were saying, it was not always possible to determine exactly who said what. This was especially the case in one group in which all three subjects were women, two of whom had very similar voices. Another problem, which may be even more important, is that it was not always possible to tell exactly what the subjects were doing, for instance, which resource they were consulting. Occasionally they could be heard reading a definition of a word or an example of usage, but it was not clear whether they were reading it from a dictionary, and if so from which one, or from an internet page. For studies that set out to examine the use of external resources in translation, this kind of information, or lack thereof, might prove critical. Relying on the subjects to provide the missing information after the experiment has been transcribed may be a risky undertaking, as they may not remember all the details. Going

through the audio recording straight after the experiment may not always be feasible either.

Other researchers seem to have encountered similar problems to the ones mentioned above, and decided to use video recordings in order to overcome them. Thus Dancette (1997: 88) says that her subjects were videotaped in order to "record some behaviors that they would not necessarily mention, such as looking up a word in a specific dictionary, and to see what they were doing when they were silent".

If a video camera is used to this end, it should be small and unobtrusive, and it should be positioned out of the subjects' field of vision, such as at an elevated position. Alternatively, researchers (e.g. Livbjerg and Mees 1999: 136) have used a method of being seated in an adjacent room, separated from the subjects by a glass panel through which they could observe the process without being in their line of sight. Whenever a reference work was used, it was noted down.

2.3.4   *Transcribing and coding the protocols*

Whether the (individual or collaborative) translation sessions are recorded on audio or on video, they have to be transcribed before they can be analyzed. That is a lot of work, which is why studies based on verbal protocols usually do not involve very large samples. This does not necessarily invalidate a study if it is done properly, but will obviously have an effect on the generalizability of the results. Examples of (collaborative) translation protocol transcripts can be found in Chapter 4.

Bernardini (2001: 259) makes a case for an adoption of a standardized way of compiling TAPs, which would facilitate comparisons and exchange of TAPs, and consequently also replication of experiments with different subjects, language pairs, task, etc. This would indeed present a clear advantage over each researcher using their own system built from scratch.

Coding, in particular, deserves careful attention. "Coding" refers to the researcher's attempts to make sense of the "raw data," to formulate concepts and classify and relate them to each other. It is the organization of data into discrete categories that can then be described, compared, counted or measured.

Bernardini (2001: 256) laments the "tendency for researchers to transcribe quickly, and then proceed swiftly to a coding of the most obvious features relevant to

their hypotheses." According to her, this "understandable but unfortunate practice" has a consequence that "a TAP can end up supporting virtually any claim, if a selective, unconstrained coding procedure is applied". Instead she suggests (2001: 256-7) the researcher's bias be limited by stating, prior to transcribing and coding, what features of the process one is trying to infer from a TAP, what indicators are likely to signal such features and what values should be recorded for each of these indicators.

This may not always be possible, especially in the case of exploratory studies where one generally does not know in advance what one is looking for. Even in those studies when hypotheses are formulated in advance, they "must be continuously 'checked out' against incoming data and modified, extended, or deleted as necessary" (Strauss and Corbin 1998: 22). And, as the same authors warn, "no matter how well thought out we think our project is at the beginning, there always are those unanticipated twists and turns along the way that lead us to rethink our positions and question our methods" (1998: 55). As emphasized in the "grounded theory" approach to research, the interplay between data and the researcher in both gathering and analyzing data (1998: 58) is the most important ingredient of coding procedures. Although the researcher should attempt to "let the data speak," this is by no means a guarantee of "objectivity" in any absolute sense.

That coding is not a straightforward, unambiguous and "objective" procedure is perhaps not emphasized enough in the literature. One of the researchers who do comment on this problem is Dancette (1997: 91), who points out that various behaviors observed in the protocols "generally are the expression of various processes occurring concomitantly. Because they are not 'discrete' operations, their coding may be difficult and, to some extent, depend on the subjective evaluation of the analyst." All this makes triangulation of various methods of data collection all the more important. Hansen (2003: 33-35) has thus argued for intersubjectivity between the observer and the observed as a way of reducing the "observer effect". Inter-subjectivity is taken to mean the reaching of an agreement about privately observed phenomena through negotiation.

Additional decisions that are bound to be very subjective and that will have profound consequences on the results of the study are the choice of test subjects and texts to be translated. They will be discussed later in this chapter, but first we describe another method of data collection.

2.3.5   *Integrated Problem and Decision Reporting*

One of the possible methods of data collection in research on translation processes is what Gile (2004) has termed the Integrated Problem and Decision Reports (IPDR). These reports are a type of "diary" that accompanies a translation, which consists in notes about the "problems" that the translator encountered in the task, the tentative solutions considered, the resources consulted and the reasons for adopting a particular solution in the end. The tool was devised in the context of translator education to enable the teacher to gain insight into the students' translation processes, rather than just the end products. As has been often observed in the teaching practice, surface errors in translation products can result from various sources, such as the students' failure to construct well-formed problems to be solved, or inadequate use of resources. Rather than correcting the errors found in the translation, the teacher tries to trace back the source of the mistake and work from there.

When it comes to using IPDR for research purposes, Gile (2004: 10) says that to his knowledge it has not been specifically employed to this end, and that the "effective advantages of the method for specific research projects have yet to be explored". Among the possible limitations of the method he mentions the "non-comprehensive nature of the data spontaneously provided by the students" (ibid.). To counter this disadvantage, he suggests more specific questions or instructions might be introduced, including numerical scales for particular categories of problems.

Hansen (2006) has compared IPDR with two other introspective methods, retrospection with replay using Translog, with or without an immediate dialogue between the researcher and the subject. She found that IPDR was less stressful than the other methods, because the subjects could work at home, undisturbed. Another advantage that both Hansen and Gile mention is that IPDR is a more convenient method of data collection for the researcher, as the subjects do most of the work themselves. This fact, however, is at the same time a disadvantage from the subjects' point of view. Another disadvantage of IPDR is that pausing to write down the report might interfere with the process of translation if it is done during the task (Hansen 2006: 15). Alternatively, if the report writing is left for after the translation is finished, the subjects are likely to forget what problems they encountered during the task. As a result, data collected by means of IPDRs are scant in comparison with those obtained from retrospection with replay (2006: 10), or verbal protocols such as think-aloud or

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collaborative protocols (Pavlovic 2005). However well instructed, the subjects tend not to write down all the problems that come up in the verbal protocols. Apart from the fact that they may not be able to recall all the problems, or think them unimportant, the subjects can also deliberately skip some problems related to aspects of language they feel they should have mastered (Hansen 2006: 18).

In spite of the disadvantages, IPDR is a good additional method of data collection, which can profitably be used, especially in piloting or control experiments.

Some examples of authentic IPDRs used in this study can be found in Appendix C.

2.3.6   Choice network analysis

Choice network analysis (CNA) is a research method developed by Stuart Campbell. In this method, "clues in translations by multiple subjects can be pooled in order to make inferences about the processes that typically operate in particular types of subjects translating particular texts under specific conditions" (Campbell 2001: 31). All the variations encountered in multiple translations of the same source text are used to construct "choice networks", which in turn "reveal a range of differences and similarities in the behavior of the subjects" (2001: 32). It has been suggested that this method can be used to complement verbal protocols in research into translation processes.

As with IPDRs, one of the main advantages of this research method is that it allows for much quicker processing of larger amounts of data in comparison with TAPs and CTPs. There is no recording or transcribing involved, only translations of the same source text by as many subjects as possible. The construction of choice networks, of course, takes some time and effort, but it is not nearly as time consuming as the transcription and coding of verbal protocols.

2.3.7   Subjects in research into translation processes

Early studies of translation processes are often criticized for using foreign language or translation students as subjects. Fear has been expressed that such protocols are not representative of translation processes in general, as they might exhibit a larger

proportion of problems connected to a lack of competence in one of the languages in question, and/or insufficient translation competence. In many of the later studies, this became a research topic in its own right: protocols of "professionals" were compared with those of "non-professionals" (students or lay bilinguals), and occasionally also other categories were introduced, such as "semi-professionals" or "novices". The aim was to isolate those features of translation processes that characterize "professional" translation in order to examine the nature of translation competence, with a view to possible didactic application of the results. For example, the student subjects in a think-aloud experiment conducted by Künzli (2004) were found to be more inclined to take risks than the professional subjects, and the latter group involved the clients in the decision-making processes, thus mitigating potential risks.

However, some findings turned out to be unexpected. One was that the assumed "professionals" (people who have worked as translators for a number of years) do not necessarily perform better than "non-professionals" (e.g. Laukkanen 1996; Kiraly 1995: 89-90). This led to a reconsideration of the term "professional," and additional terms were introduced, such as "expert". Work focusing on the nature of expertise (e.g. Kaiser-Cooke 2002, Sirén and Hakkarainen 2002) has sought to clear up these concepts, and some scholars see "identification of features of expertise" as the most promising avenue of research into translation processes (e.g. Tirkkonen-Condit 2002; but cf. Pym's 1996 criticism of expert-related discourse).

Furthermore, it was observed in TAP studies that the "professional" subjects do not necessarily take the experimental situation seriously enough. Consider this observation by Laukkanen (1996: 269): "two of the subjects [both of whom were professional translators] had not taken the tasks seriously enough, i.e. they did not act as in a real situation but handed in incomplete versions because 'it was just an experiment'." She describes the subjects' attitude as "indifferent and even cynical", and attributes this to the fact that the tasks took place in the middle of their working day in a tight schedule, which must have lowered their motivation and energy. These, of course, are interesting findings in their own right. Conversely, Tirkkonen-Condit (1997: 81) found that *student* subjects "occasionally revealed that they approached the experimental situation as only a game which did not have to be taken seriously". On the other hand, she observes that "the professionals and teachers approached the experimental situation as an opportunity to display their knowledge, proficiency and responsibility". It could be argued that this latter type of behavior could have equally

adverse consequences for the results of the study, unless attitudes toward experimental situations are what one is studying in the first place. These observations relate to what was discussed earlier in connection with the (im)possibility of excluding the social dimension in individual TAP studies, namely that the subjects can act in a certain way for the sake of the researcher.

As far as student subjects are concerned, Wilss (1996: 48) further remarks that "translation trainees are as a rule unwilling to serve as test subjects" because they do not wish to be sidetracked from their goal, which is to finish their university course as quickly as possible. Other researchers' experience, as well as our own, has been that students generally like to participate in experiments. It is important, in our view, that students should always be given the freedom to decide whether they want to participate or not. This becomes all the more significant if the experimenter is at the same time their teacher. The freedom of choice should extend beyond the mere formality of asking, in order to exclude to the largest possible degree the presence of covert pressure, such as fear of getting into the teacher's bad books by refusing, or gaining "points" for accepting. This may be achieved by making it clear to the students that participating in the experiment would not affect their grade in any way, except insofar as they may learn something during the course of the experiment.

The students in the experiments of our pilot study (Pavlovic 2005) approached the tasks very seriously and with a very high degree of motivation and involvement. When they experienced difficulties they did not give up easily, but continued to struggle to find the right solutions with which they would be satisfied. The post-experiment questionnaire asked them to rate their enjoyment of the task on the scale of 1 ("not at all") to 5 ("very much"). The average rating was 4.55. They were also very relaxed, perhaps thanks to the collaborative setting. Jakobsen (2003: 77) reports that in his experiment, which involved individual translation tasks, the student subjects were also very much at ease and confident, more so than the professionals. The latter "were very self-conscious (some might say hypersensitive or even slightly paranoid) about the whole situation. They obviously felt they were in an unnatural situation". As Jakobsen explains, the professionals were very conscious that the experiment might challenge their professional face and therefore wanted to avoid compromising themselves at any cost" (cf. Tirkkonen-Condit's observation in 1997: 81, cited above).

As can be seen from the above discussion, it cannot be taken for granted that either the "professionals" or "non-professionals" necessarily make *better* or more

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appropriate subjects for studies into translation processes. Studies with subjects at different levels of competence are needed, as each type of subject can provide useful and valuable data. The only reservation is that we should be careful when making generalizations on the basis of our results, as warned by Bernardini (2001) and others.

2.3.8   *Evaluation of target texts for research purposes*

What in our opinion deserves special consideration is the evaluation of translations produced in the course of the experiments, for the purpose correlating "high quality products" and the strategies that led to their production. In the reports on research into translation processes, it is not always clear who assessed the quality of the translations and according to what criteria. Kiraly (1995: 88) is among those who make the evaluation procedure explicit, by stating that in his study "the researcher's evaluation of the functional adequacy of elements translated" was complemented by "the global evaluation completed by two independent raters". Likewise Hansen (2006: 9) explains that the products were evaluated anonymously, "in terms of errors, which were marked by two potential recipients of the target texts" and herself. Only those errors they all agreed on were marked as errors. Jääskeläinen (1993: 117) states that the evaluators were four teachers at the Savolinna School of Translation Studies, who were not told in advance which translations had been produced by whom. It could be argued that using (only) teachers as evaluators may not give realistic results. Chesterman (1999: 15) has warned against simply assuming that teachers are the representative reader of the target text. Obviously, in the course of translator education, having external evaluators is not always feasible, but for the purposes of the experiment it might be a good idea.

Even this does not always solve the problem, as we have experienced in our pilot study. In order to have a less biased evaluation of the target texts produced during the experiments, it was decided to have three different evaluators, which, it was hoped, would provide a "multiple-perspectives" (Jonassen 1992: 143) overall picture of the products. One of the evaluators was thus a professional translator (with Croatian L1) with years of experience in translating texts similar in type and content to the ones used in the experiment (a business news report), but with no experience in teaching. The second evaluator was also a Croatian professional translator and interpreter, but who was at the same time a university teacher of translation. The third was an educated

native speaker of (American) English with no experience in translation or translator training. The first two were asked to evaluate the final products as translations (they were given the source text) and the third as texts in their own right (without access to the Croatian source). Although there was a degree of agreement among the three, there were also considerable differences, both in the overall mark and in individual corrections and comments. But this was to be expected, and was in fact the reason why several evaluators were used in the first place.

However, some unexpected problems became apparent when the evaluations were returned. One was that the evaluators themselves made mistakes of the kind that could not be attributed to their different "perspectives". For instance, one of them (the L1 English evaluator) "corrected" the name of a European grouping that some of the subjects had checked and used correctly. An even more interesting thing happened with another evaluator. Entirely through the researcher's mistake, she got two copies of the same translation (together with all the others, which were different). Not only did she give the two identical translations a different mark, but she also corrected different things in the text. It is tempting to attribute these occurrences to the evaluators' carelessness. However, knowing that the evaluator in question is very conscientious, we are more inclined to conclude that such things can happen to the best evaluators. We are not suggesting that these difficulties cannot be overcome or that the evaluation of translations as a variable in research into translation processes should be abandoned. We are merely arguing for a careful – and more explicit – approach to the matter.

2.3.9 *The choice of source texts for the experiments*

Laukkanen (1996: 264) warns that "protocols of two translation processes where different texts are translated can never be quantitatively directly comparable". Livbjerg and Mees (2003: 125) also discuss some problems related to research design with regard to the choice of texts: it is not possible to have the same subjects translate the same (unknown) text in two different conditions. An alternative is to use different texts that are judged to be about the same degree of difficulty, although this is not all that easy. Some authors (e.g. Neunzig 2001: 88) propose using different sections of the same text. Another way out of the predicament is to use the same text with different but comparable subjects. But according to Laukkanen (1996: 265), using the same subjects

means that "the effect of the subject's personality is the same in both tasks which is a clear advantage compared to experiments where different subjects' processes are compared". The question of what type of text should be used, and how to measure the routine vs. non-routine opposition (degree of familiarity) is another difficulty. Most authors agree, however, that authentic texts should be used in the experiments, and that the subjects should be given realistic task descriptions (a "brief").

Obviously, in studies comparing translation processes in two directions, it is impossible to use the same text. Finding comparable texts is therefore one of the main challenges in research on directionality in translation processes.

Texts can be compared in terms of various parameters, such as readability, word frequency, length or genre. There are many methods and formulae for measuring readability – the relative ease with which a text can be read – among them, the Kincaid formula, the Flesch reading easy formula, the Fog index, and so on. The Lix formula (see Bedre Word 2007) devised by Björnsson (1983), for example, measures word length and sentence length to arrive at a grade ranging from (below) 25 to (over) 54 (see Table 2). As an illustration, this text has a Lix score of 50.

Table 2 – Lix readability grade

Lix grade	Level of difficulty	Example
Below 25	Very easy	children's books
35-44	Medium	daily newspapers and magazines
45-54	Difficult	debate literature and popular scientific articles
Over 54	Very difficult	non-fiction, treatises, textbooks, legal texts

Another formula, SMOG developed by McLaughlin (1969, 2007; see also Trottier 2007), uses syllable count and sentence length to measure difficulty (Table 3).

Table 3 – SMOG readability grades

SMOG Grade	Educational Level	Example
0 – 6	low-literate	Soap Opera Weekly
7	junior high school	True Confessions
8	junior high school	Ladies Home Journal
9	some high school	Reader's Digest
10	some high school	Newsweek
11	some high school	Sports Illustrated
12	high school graduate	Time Magazine
13 – 15	some college	New York Times
16	university degree	Atlantic Monthly
17 – 18	post-graduate studies	Harvard Business Review
19+	post-graduate degree	IRS Code

Problems arise, however, when these tools (which are freely available on the Internet) are used to compare texts written in different languages, as is the case in studies involving directionality of translation. To what extent are the grades thus obtained comparable across languages? Björnsson (1983) compared readability of newspapers in 11 languages, and the results indicate that for texts of the same genre from comparable newspapers the scores varied widely from language to language. One of the reasons doubtlessly lies in the morphological and syntactical differences of the languages in question. One could hypothesize, however, that stylistic norms also might play a part, as a simple test involving documentary translation suggests. Texts from Croatian newspapers, for instance, get scores more similar to those Björnsson found for Russian, Finnish, Italian, Spanish or Portuguese newspapers than to those he found for comparable English, Swedish, Danish or Norwegian dailies. Even when translated (in a documentary way) into English, Croatian texts still get much higher scores than texts of the same genre originally written in English.

Testing word frequency by means of electronic corpora might be impossible, as such corpora are still lacking for many languages of limited diffusion.

An additional problem with all these measurements is that what makes a text easy or difficult to read is not necessarily the same as what makes it easy or difficult to translate, or more specifically translate into language X as opposed to language Y. "Difficulty" is a relative, rather than essentialist, notion. We might ask ourselves: difficult for what purpose, and for whom?

Pre-testing the texts on comparable subjects is no guarantee of success either, as the results obtained in this way will *a priori* be related to directionality of translation. A text, or part of it, may be relatively easy to translate into L1, but more difficult for subjects doing the same translation into their L2 (or vice versa). In this case, it is almost impossible to extricate difficulty as a source text-related variable from difficulty as a directionality-related variable.

Again, using a combination of different methods can yield a more accurate result than any single method in isolation.

In this section, we have presented the main methodological issues in research on translation processes. Advantages and disadvantages of different methodologies have

been discussed, together with the most burning issues, such as subject and text selection and evaluation. What most authors agree on is the need to combine the various ways of data collection in order to arrive at a more complete picture of what goes on during translation. To that effect, repeated arguments have been made in favor of triangulation (see esp. Alves 2003). Presently projects are being launched to test new technologies and novel combinations of methodologies, such as for instance the Eye-to-IT project (2007) which combines computer keystroke logging, eye-tracking technology and EEG monitoring.

3   Hypotheses and methodology

3.1   Research questions, hypotheses and aim of the study

Here are some of the research questions we asked at the beginning of our study: Are translation processes in the two directions different? If so, in what aspects exactly, and to what extent do they differ? How can we study these processes, and how can we measure the differences? What kind of experiments can we set up, and with what kind of subjects and source texts? Would there be any practical applications of this type of research for translator training in settings where L2 translation is a regular occurrence in the professional market?

Based on these questions, we formulate the following general hypothesis:

- **Hypothesis**: L1 and L2 translation processes display some differences that can be attributed to the *direction* of translation.

More specifically, we hypothesize that L1 and L2 translation differ in some important aspects of translation *processes*. The following features are selected as likely candidates for these aspects:

- The number and type of problems the subjects encounter;
- The solutions they consider;

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- The ways in which they assess the solutions and make final decisions;
- The resources they consult;
- The actions/interactions they take;
- The arguments they use in making decisions;
- The quality of their final products.

The main aim of our study is therefore to examine and compare L1 and L2 translation processes in order to isolate the features that differ significantly according to direction, with a view to improving translation teaching.

With the direction of translation as the experimental variable, it is obviously not possible to use the same source texts in both directions, but it is possible to use the same subjects. Given the study's didactic angle, novice translators were deemed to be most suitable subjects for our experiments because of their experience in collaborative translation in the learning context.

In order to compare collaborative translation with individual translation, we devised a control experiment aimed specifically at testing the advantages and disadvantages of collaboration in the translation learning context. The secondary aim of our study is therefore to examine collaborative translation vs. individual translation by means of two alternative research methods: choice network analysis and integrated problem and decision reports.

As can be seen, various sources of data and a combination of research methodologies have been used in this study. In this chapter we describe the sources of data as well as the methods and tools that were used to elicit, process and analyze these data. We also provide details regarding the subjects who took part in the study, and their educational setting. The source texts and the assignment ("brief") are also discussed. Before that, we offer an outline of our research design.

3.2   Research design

Figure 1 shows an outline of the different stages of the study, from the source texts and subjects, through data elicitation, processing and analysis, to the findings and conclusions.
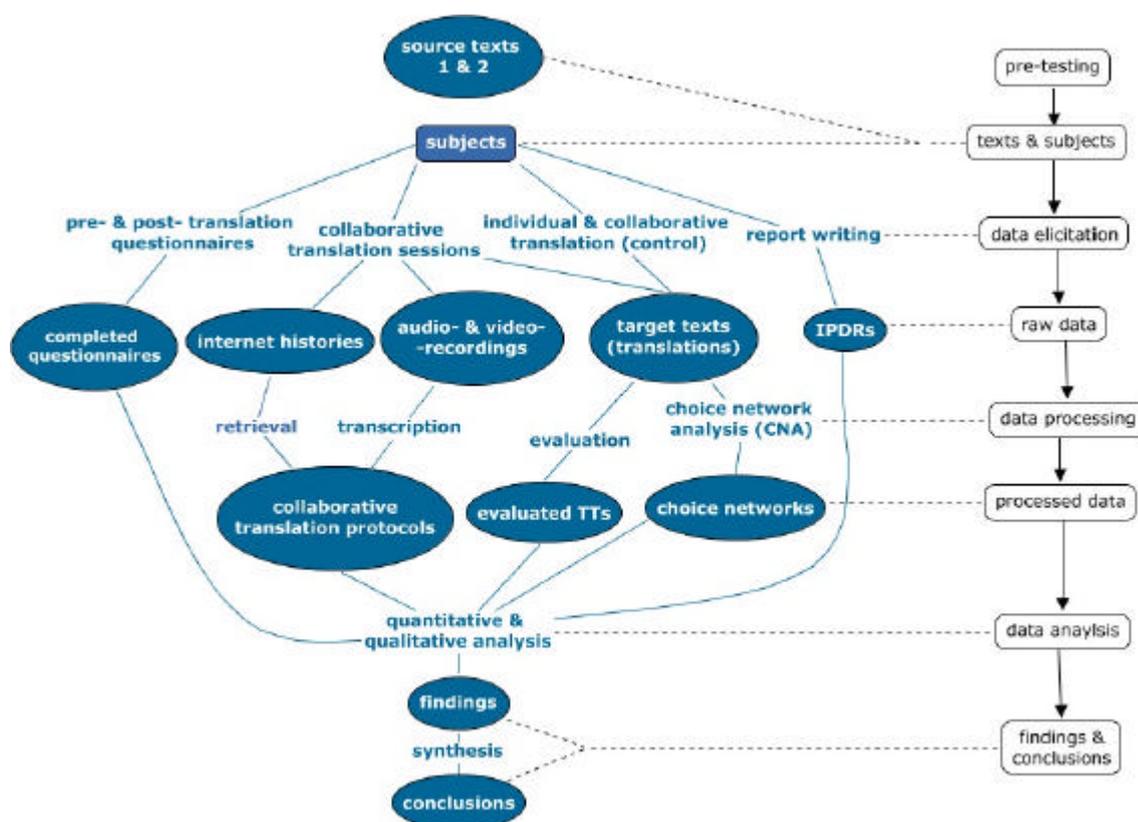
Figure 1 – Research design for this study

Two source texts, one in English and one in Croatian, were chosen and pre-tested for comparability. Subjects were recruited for the study.

In the central part of the study, a series of experiments were conducted in which a set of subjects were asked to fill out a pre-translation questionnaire and then collaboratively translate two source texts, one into L1 (Croatian) and the other into L2 (English). This was followed by a post-translation questionnaire. The collaborative sessions were video-taped and audio-recorded. Later, the collaborative translation protocols obtained from the sessions were transcribed and coded. Internet histories were kept track of and later retrieved. This information was added to the protocols. The target texts (translations) were collected and given to external evaluators for evaluation.

Control experiments were conducted with a set of comparable subjects, who were asked to translate the same two source texts at home, some of them individually and others collaboratively. They were instructed to accompany their translations by IPDRs (see 3.6.3). The control-experiment subjects were asked to fill out the same pre- and post-translation questionnaires that were used in the main experiments. Their translations were evaluated according to the same criteria as the translations from the main experiments. A choice network analysis was performed on the control-experiment

translations and choice networks created. Introspective data from the IPDRs were used to supplement the networks with additional information.

All the data were analyzed quantitatively and qualitatively. The findings were triangulated and main conclusions formulated.

The remainder of this chapter will describe the main aspects of the study in greater detail.

3.3   The setting of the study

The study took place in Zagreb, Croatia. At the present time, in this country there are no undergraduate programs in translation, and most future translators are educated at departments of modern languages (see 2.1.4). For the past twelve years, the researcher has conducted practical translation classes at one such department, the Department of English at the University of Zagreb, where she had herself obtained her B.A. (English and Spanish) and M.A. (Linguistics). This department is the oldest and most renowned of the five English departments in Croatia. At the moment a reform is under way as part of the Bologna process. Under the proposed new system, students will take a general three-year course in two languages leading to a first (B.A.) degree, after which several second-cycle tracks will be on offer, among them a two-year M.A. program in translation.

For the present moment, however, students who wish to become full-time or part-time translators take a four-year B.A. degree program in two languages. Students majoring in English thus take a wide range of courses during their four years of studies, including a wide selection of courses on literatures in English, as well as linguistics courses such as General Linguistics, Sociolinguistics, Discourse Analysis, Cognitive Linguistics and so on. Practical classes in English as a second language are obligatory for all students, who are expected to have a relatively high level of competence in that language even at the time of the enrolment (candidates are selected on the basis of an entrance exam; the ratio of candidates to available places is generally 7:1). By the time they get to their fourth year of studies, the students have generally been learning English for at least twelve years. For them to pass their final-year exams, their L2 competence at the end of their fourth year is expected to have reached the equivalent of level C (C2 being the highest, native or near-native level of competence) of the Council of Europe's

(2007) *Common European Framework of Reference, CEFR*. The following table shows the scores of some of our fourth-year students who belong to the upper 50% among their peers. The scores have been obtained by Dialang (2007), a language assessment application based on the CEFR:

Table 4 – Dialang scores for final-year students

	Placement	Vocabulary	Structures	Writing	Reading
Student 1	938/1000	C2	C1	C1	C2
Student 2	879/1000	C2	C2	C2	C2
Student 3	728/1000	C2	C1	C2	C1
Student 4	938/1000	C2	C2	C2	C1
Student 5	980/1000	C2	C1	C2	C1
Student 6	960/1000	C2	C2	C1	C1
Student 7	960/1000	C2	C2	C1	C2
Student 8	840/1000	C2	C2	C1	C2
Student 9	1000/1000	C2	C2	C2	C2

A language user on level C is described in the CEFR as a "proficient user", more specifically:

User C2: Can understand with ease virtually everything heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.

User C1: Can understand a wide range of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices. (The Council of Europe 2007: 24)

During the four-year program, the students have two contact hours (90 minutes) per week of practical classes in translation from Croatian into English in their 5th and 6th semesters. Fourth-year students have one contact hour (45 minutes) per week of practical translation from English into Croatian, and two contact hours of practical translation from Croatian into English in their 7th and 8th semesters. In addition to these courses, which are obligatory for everyone, students can take an optional two-semester course on Translation Theory and/or a two-semester translation seminar either in their 3rd or 4th year.

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The practical translation classes ("exercises"), especially translation from Croatian into English, were originally devised with a view to improving the students' knowledge of English as a second language. However, the increased demand for translation on the Croatian market (discussed in more detail in 2.1.4) has meant that a large number of our students end up working as full-time or part-time translators (and/or interpreters). To meet this demand, the practical translation class has undergone a transformation: from a language-learning venue, in which translation was a means to an end, it has gradually changed to a translation-learning venue, insofar as this has been possible under the time constraints. This means that we work with authentic texts, including occasional authentic translation projects (for a real client), and considerations such as translator resources, target readership, task specifications, fees, translator ethics, translation norms, etc. are discussed regularly. Students whose skills in either L1 or L2 are observed to be severely lacking are guided towards ways of improving them, and on occasion whole groups are given the opportunity to practice or revise a skill or area of language competence they are seen to be struggling with. However, the main objective of the practical translation courses is to help students acquire the foundations of translation competence – the skills needed to "produce an acceptable target text in one language on the basis of a text written in another" (Kiraly 2000a: 13) – as well as translator competence – "being able to use tools and information to create communicatively successful texts that are accepted as good translations within the community concerned" (2000a: 13-14). The dominant method of learning in class is collaborative, combined with individual work at home. A Moodle-based distance-learning platform (see Moodle 2004) is used to complement the class activities, given the small number of contact hours per week. Professional translators and large employers are invited several times a year to provide students with additional real-world perspectives. Students have the opportunity to take a week of translator traineeship at the Ministry of Foreign Affairs and European Integrations, a translation agency, or Croatian Television (HRT).

Under the present system, the fourth year is the final year. However, in practice, once they have finished all the coursework, the students take another year (*apsolventura*) to pass all the final exams and write their graduation thesis. During this year, many start working, at least part-time.

We offer these explanations in order to situate the setting and the subjects involved in the study. Can these subjects be described as second-language students or

translation students? Although they are technically the former, it would be misleading to think of them as second-language students *only*, although obviously to describe them as translation students would be equally misleading. More details about the subjects who took part in the study will be provided in the next section.

3.4 The subjects participating in the study

Two sets of subjects took part in the study: twelve subjects, or four groups of three, participated in collaborative translation sessions, which were the central part of the study (see 3.6.2). Another 54 students took part in the control experiments aimed at comparing collaborative and individual translation (see Chapter 7). Of the latter set, 30 translated individually, while 24 worked in 8 groups. In all the experiments, the same subjects were asked to translate in both directions, from and into their L1. This arrangement aimed at reducing subject-related variability in the two directions.

The subjects' previous contact with translation in the educational setting had been a third-year course in translation from Croatian into English, and fourth-year courses in translation from Croatian into English and from English into Croatian (see 3.3). In these translation courses, the students had worked individually, at home, and collaboratively, in class, working mostly in groups of three to four students. Small groups would also interact with each other to exchange questions and discuss the most challenging or most interesting parts or aspects of the texts. The collaborative tasks consisted in revising their own or their peers' translations, producing collaborative translations on the spot or working on a longer authentic translation project. The students also translated at home (individually or in groups), worked with parallel texts, and compiled shared (web) glossaries of contextualized terms for particular topics. They regularly uploaded their individual or collaborative translations to a designated place on the website so that the teacher could look at their work in more detail and provide the relevant feedback or advice. The subjects were thus used to working both individually and with others.

In the pre-translation questionnaires, some of the subjects reported having taken a course in Translation Theory and/or a translation seminar. They also reported having some experience in translation in the "real world," mostly translating texts as a favor to friends and relatives. The study took place after the subjects had taken their final translation exam, at the beginning of their *apsolventura* (see 3.3).

The reason these "novices" were considered particularly suitable for the experiments was that they found themselves at a point "between the familiar knowledge communities they already belong to and the one that they do not yet belong to but are trying to join" (Bruffee 1999: 75). Their stage of development could be described as that of "conscious competence" (cf. González Davies 2004: 40). While their translation competence was expected to be relatively well developed, they were also expected to encounter problems and to be able to articulate and discuss them, explaining and justifying their decisions. For the use of collaborative translation protocols as a method of data collection (see 3.6.2), these subjects were considered particularly suitable. They were used to working collaboratively, for which reason the experimental task was expected to be a rather natural situation for them.

The subjects were not chosen for the research, but rather came forward when volunteers for the experiments were sought. This decision is not unproblematic, since it obviously raises the issue of whether the findings are only applicable to the type of student who would volunteer to take part in an experiment. However, taking into consideration the setting of the study (see 3.3), it was important to select students with an interest in translation, who were striving to join the translator profession on the Croatian market. Furthermore, we were not comfortable with the idea of "enlisting" the subjects for the study, as the situation involved asymmetrical power relations (teacher-students). The use of volunteers also helped to reduce the bias that might have been involved if the researcher had chosen the subjects for the study.

Volunteers were not assigned to groups, but rather whole groups of students who had worked collaboratively in class volunteered for the project together. This is known in literature as self-selection (e.g. Gokhale 1995). (For the control experiments, the subjects were allowed to choose whether they wanted to work collaboratively or on their own, depending on their preferred style of learning.) The idea was to ensure a relaxed, friendly atmosphere in which the subjects would talk more freely and take an active part in the discussion with the people they knew and had worked with before. It was hoped that doing the collaborative task in the environment of trust "emanating from community membership" (Kiraly 2000a: 77) would help relieve the potential stress involved in taking part in an experiment and thus ensure conditions more like those in the students' regular learning environment. Judging from the recordings, the questionnaires and unsolicited off-record comments by the students, this seems to have been achieved to a high degree (see Chapter 6).

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Details of the subjects' background, such as reading habits, language and translation competence, experience in translation, attitudes regarding directionality, and so on, were elicited by means of a pre-translation questionnaire (see 3.6.1 and Appendix B). The findings from the questionnaires are reported in Chapter 6.

3.5 The source texts and the translation task

The subjects were asked to translate two texts, one from English into Croatian ("Text 1") and one from Croatian into English ("Text 2"). The texts, which can be found in Appendix A, are non-technical, general-language texts belonging to the same type and genre. Both are around 230-word long excerpts from popular travel guides – a guide to Ireland and a guide to Croatia – and both deal with roughly the same historical period. This type of text is frequently translated in both directions in the Croatian market, which was one of the reasons we decided to use them. Each subject was given a printout of the excerpt, and the whole book was also made available, as were parallel texts in the target language.

3.5.1 Text comparability

The main challenge was to find two texts that would be comparable and at the same time not similar enough to cause the "learning" or "retest" effect. In order to further counter the retest effect arising from the use of comparable texts, half of the groups (and individuals) translated into L1 first, and then into L2, while the rest worked in the opposite order. There was no significant difference found related to the order of the tasks.

To assess their comparability, the texts were pre-tested on comparable subjects with the help of IPDR (see 3.6.3 and Appendix C). The texts were found to feature approximately the same number and type of problems, but the problems were not found to be similar enough to be conducive to "learning".

The readability of the two source texts was additionally compared with the help of SMOG readability formula (see section 2.3.9 for details). An attempt was made to calculate the difference between English and Croatian in this respect, by comparing

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texts from two online editions of daily newspapers, *The Times* and *Vjesnik*. While the randomly chosen English articles from *The Times* got a SMOG grade of between 12 and 14, which is consistent with the SMOG scale given in Table 2, Croatian articles chosen in the same way from *Vjesnik* ranged between 20 and 24. When the SMOG readability formula was applied to the two source texts used in this study, the English text got a grade of 12.63, while the Croatian text got 20.1. Applying the figures obtained by comparing the two daily newspapers as a correction index, we can conclude that the two texts indeed seem comparable with regard to readability as operationalized in the SMOG formula.

3.5.2   Translation assignment ("brief")

Both texts were accompanied by a realistic task description (a "brief" or commission). As Figures 2 and 3 show, the commission included information about the source, the (assumed) publisher and target readers, as well as quality requirement:

Source text: an excerpt from *Ireland, Insight Guides. Sixth (updated) edition.*

ST publisher: APA Publications, Langenscheidt Publishing Group, 2005.

TT publisher: Profil International (a leading Croatian publisher).

Target readers: Croatian-speaking visitors to Ireland.

Quality requirement: To produce a publishable Croatian translation of the text.

Resources: All the resources available [see 4.6].

Figure 2 – Brief accompanying "Text 1"

Source text: an excerpt from *Hrvatska, Turisticka monografija.*

ST publisher: Turisticka naklada Zagreb, 2000.

TT Publisher: Blue Guide - A&C Black (London) and WW Norton (New York).

Target readers: English-speaking visitors to Croatia.

Quality requirement: To produce a publishable English translation of the text.

Resources: All the resources available (see 4.6).

Figure 3 – Brief accompanying "Text 2"

3.6   Data elicitation methods and tools

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3.6.1   Pre- and post- translation questionnaires

All the subjects were asked to fill out two questionnaires. The pre-translation questionnaire, which also served as a signed consent form, comprised questions about the subjects' background and attitudes. The post-translation questionnaire, which the subjects were asked to fill out immediately after each task, aimed at eliciting introspective data regarding the translation processes and their final products, as well as group interaction (where applicable).

The questionnaires, which can be found in Appendix B, were pre-tested together with the source texts on a comparable group of subjects. The findings from the data elicited by the questionnaires are reported in Chapter 6.

3.6.2   Collaborative translation sessions

The collaborative translation protocol as a method of data collection has been described in section 2.3.2, with major advantages and disadvantages discussed. Here we describe how we used this research method in our study.

The subjects, four groups of three, were asked to translate collaboratively two texts, one into English and one into Croatian. Groups of three were chosen for reasons discussed in 2.3.2.3. The groups were recruited for the experiments on a volunteer basis, and the subjects worked with the people they were used to working with in class. The idea was to provide a positive working environment in which the subjects trusted each other and were more likely to relax and verbalize freely. The expectation was that in such an environment their verbalizations would be governed more by the translation task at hand and less by the experimental situation.

Two groups ("A" and "C") translated into English in their first task and into Croatian in their second task. The other two groups ("B" and "D") worked in the opposite order. The purpose of this arrangement was to control the "retest" effect. The two tasks took place on a different day, so that the subjects were not too tired for the second task.

The collaborative translation sessions were recorded with a digital video camera. To minimize the anxiety-inducing effect, the camera was placed at an elevated position, out of the subjects' field of vision. The researcher was not present in the room, and the

experiments took place in the researcher's home, with the aim of creating a more "friendly" atmosphere (cf. Hansen 2006: 14-15).

The subjects were allowed to bring their own resources to the experiment, in addition to the resources that were made available by the researcher. The resources used have been classified in section 4.6.

The subjects' time for the tasks was not limited. The sessions took between 90 minutes and two hours, a decelerating factor being the slow internet connection available to the researcher at the time of the experiments.

3.6.3   Integrated Problem and Decision Reports (IPDRs)

The aim of the control experiments was to compare collaborative and individual translation of the same two texts used in the main experiments. As individual and collaborative verbal protocols are in fact two different research methods (see section 2.3), we needed alternative methods that could be used in both conditions (individual and collaborative translation tasks). It was decided to use a combination of data gathered by the Integrated Problem and Decision Reporting tool (see 2.3.5), choice network analysis (2.3.6) and questionnaires.

In the control experiments, the subjects were therefore asked to accompany their translations with IPDRs, some examples of which can be found in Appendix C.

The students were given the following instructions (Figure 4):

Instructions for writing a report on your translation:

1. You should report on:

- ALL the problems encountered (a "problem" is everything you had to think about or check, whether the choice of word, word form, spelling, capitalization, syntax, collocation, article, sentence structure, text structure…);

- the steps taken to solve the problem (what possible solutions you considered, what resources you consulted, etc.); and

- what you decided in the end and why.

2. You should give full references of the sources consulted, e.g. the full name of a dictionary, encyclopedia or parallel text, the link to a website, etc.

If you find a word or expression on the web, please list the site (not just "I found it on the Internet").

If you consult someone, write that down too (you don't have to write the name of the person but only who they are, e.g. an expert in the field, a friend who has studied this subject…)

3. Your report can be in the form of notes, footnotes or comments – whatever you find easiest. You don't have to write whole sentences.

4. Write the report during or immediately after translating (later you will not remember what you did).

5. Your report should be in the same Word document as your translation.

Figure 4 – Instructions for IPDR

3.7 Data processing methods and tools

3.7.1 Transcription of collaborative translation sessions

Probably the most arduous phase in any research on translation processes which uses audio- or video-recordings is the transcribing of the translation sessions. This task involves writing down everything the subjects are heard saying and, in the case of video-recordings, additional information is added to the script, sometimes resembling "stage directions": "reading from resource X," "typing," "joking," "laughing," "reads TT from screen," "nods," "smiles," and so on. Noting the exact time code alongside the dialogue can make it easier to find the exact spot if this should become necessary at a later stage.

It could be argued that it is possible to analyze the data without transcribing, by using notes and going through the recorded material as often as necessary. This might depend on the researcher: some people are more auditory, and others more visual. It is generally easier for the latter group to make sense of speech if they see it in written form. In addition, producing a transcript might facilitate the sharing of protocols with the wider research community. In this study, for example, the students' verbalizations were mostly in their L1, Croatian. The researcher had to produce an English gloss to make the protocols accessible to non-Croatian users should this for any reason be required.

In the transcripts, italics were used for those elements that were originally said in English. Boldface was used for untranslated Croatian elements, such as parts of the source or target texts, with a gloss in square brackets where necessary. Square brackets

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were also used to convey information other than the subjects' verbalizations. Block capitals were used for emphasis.

3.7.2 Evaluation of target texts

No universally applicable or "objective" method of evaluating translations has been designed yet and it is doubtful if this will ever be possible (or even desirable). However, if we are to take translation quality into consideration as one of the variables, some system of evaluation, however imperfect and liable to criticism, has to be applied. A more detailed discussion about the importance of target-text evaluation in research into translation processes can be found in section 2.3.8.

In this study, an attempt was made to achieve intersubjectivity (in the sense of agreement or consensus) through a "multiple-perspectives" evaluation (Jonassen 1992: 143). To this end, three external evaluators were chosen to do the evaluation of the target texts obtained in the experiments: two professional translators with more than 15 years of translation experience in both directions, and a translation teacher, also with more than 15 years of practical experience in both translation and teaching. The same three people were asked to evaluate the translations in both directions, in order to reduce variability. An additional person, an L1 English speaker, was consulted in connection with translations into English as all three evaluators were L1 speakers of Croatian with near-native competence (C2) in English.

The translations, both individual and collaborative, were given to the external evaluators, who were not acquainted with the aims of the study or the ways in which the translations were produced. The translations were coded, so that the evaluators did not know who the author(s) were, or indeed that some translations were collaborative and others individual. The translations were arranged in a different order for each evaluator to prevent the effect well known to translation teachers whereby one tends to be stricter with the first few translations and less strict towards the end as one "gets used" to the students' mistakes. In this way, it was hoped, it would not be the same translations that would get the harsh / soft treatment.

The evaluators were instructed to "revise" the translations in two ways. Red color was to be used to mark parts of the target text that were considered unacceptable. These would be the parts of text that, in their opinion, could not be published as they were,

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either because they distort what the evaluators' perceive to be the plausible interpretation of the source text, or because they contain an unambiguous target language error (of whatever kind). Yellow color, on the other hand, was to indicate parts of text which, although perhaps passable – in the sense that they were "good enough" – were nevertheless "revisable". In other words, the evaluators could think of a "better" version, perhaps more idiomatic, more readable, more conforming to target usage norms, and so on. These would be the parts of target text that, while not exactly unpublishable as such, could benefit from improvement. The two categories of revision would correspond to the real-world notions of "must revise" and "revise if there's enough time" respectively.

The three evaluators returned the translations that they had revised on their own in the manner described above. When the revisions were compared, it was found that there was a degree of overlap among the three evaluators, but that there were also differences. In the second stage of the evaluation process, the parts of text that had been evaluated in a different way were discussed among the evaluators until consensus was reached. The final decisions were made collaboratively regarding what should count as unpublishable ("red card"), publishable but could be improved ("yellow card"), and publishable "as is". The researcher then went back to the translations and applied the decisions, marking in red and yellow the revisions agreed on.

To facilitate quantitative comparison, "red cards" were counted as one negative point, and "yellow cards" as half a point. The negative points were added up and the "revisability scores" compared among the groups and individuals.

3.7.3   Choice network analysis (CNA)

Choice network analysis as research methodology has been discussed in section 2.3.6.

In our study, we used this method in our control experiments – in combination with IPDRs – to compare collaborative and individual translation. Subjects comparable to those who took part in the recorded collaborative translation sessions were asked to fill in the same pre- and post-translation questionnaires and to translate the same source texts in the two directions, some of them individually and others in groups. Choice networks – kinds of "decision tree" – were created on the basis of their translations and, complemented with data from IPDRs, used for comparison. The idea was to see whether

there was much difference between the problems encountered, the selected solutions, the resources used, and so on, between individuals and groups. As both CNA and IPDR methods offer less complete data than do verbal protocols, the two methods were combined to gain fuller insight into the control experiments. Questionnaires were used as additional sources of data.

3.8   Data analysis methods

A distinction is usually made between quantitative and qualitative types of research, although frequently they go hand in hand and complement, supplement or inform each other. As Gile (1998: 84) points out about interpreting, there are specific aspects of translation processes that are easier to quantify, such as the number of problems, solutions, resource consultations, and so on, while other aspects are more difficult to quantify. In this study, both quantitative and qualitative methods were used to complement each other, adding something to the ultimate findings and contributing to the central aim of the study.

3.8.1   Quantitative analysis

In quantitative research, data are collected and/or coded in a way that allows them to be analyzed in terms of measuring, counting and various other mathematical or statistical procedures. In this study, we used the following methods of quantitative analysis:

Measuring: we measured (by means of questionnaires) the subjects' satisfaction with their products, processes and group interactions, their attitudes towards directionality of translation, collaborative work, and so on, on a numerical scale from 1 to 5;

Counting: we counted the number of problems, tentative solutions, spontaneous solutions, solutions found in external resources, the number of acceptable / unacceptable selected solutions, and so on;

Percentages: we worked out the percentage of e.g. spontaneous solutions in the total number of tentative solutions produced in a translation task;

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Quotients: we divided e.g. the number of spontaneous solutions with the number of problems;

Mean values: we calculated the mean value of e.g. the subjects' satisfaction with the final version of their translation;

T-test: where appropriate, we used a statistical significance test to compare differences between mean values.

3.8.2   Qualitative analysis

Grounded Theory, an approach to qualitative research developed by two sociologists, Barney Glaser and Anselm Strauss, defines qualitative analysis as "a nonmathematical process of interpretation, carried out for the purpose of discovering concepts and relationships in raw data and then organizing these into a theoretical explanatory scheme" (Strauss and Corbin 1998: 11). Qualitative methods are used in a variety of fields and for a variety of research problems, especially in relation to those phenomena that are "difficult to extract or learn about through more conventional research methods" such as "feelings, thought processes, and emotions" (ibid.). While research on translation processes does yield data that are countable and measurable and therefore quantitatively analyzable, using only those methods would severely limit the achievements of studies involving such a complex phenomenon as translation.

Qualitative methods of description and coding were used in this study to develop, relate and classify the main concepts, to make sense of the subjects' verbalizations, to find patterns in their actions/interactions during collaborative translation tasks, to create group profiles, as well as to relate and interpret quantifiable data. Chapter 4 presents in detail the concepts generated during the process of coding.

3.8.3   Mind maps and charts

Diagrams are an important aspect of conceptual ordering and are just as useful in the presentation of the findings. The "mind maps" used in this study were created with the help of IHMC CMapTools (2006), a freeware application. To construct "choice networks", we used another free mind-mapping program, FreeMind (2006). The graphs were made with the help of the Microsoft Graph Charts available in Word for Windows.

4   Key concepts: definitions, classifications and examples

Within the framework of Grounded Theory, the central process in the qualitative analysis is the process of coding, which refers to "the operations by which data are broken down, conceptualized, and put back together in new ways. It is the central process by which theories are built from data" (Strauss and Corbin 1990: 57). This conceptual ordering is a crucial part in theory building, and in some studies it is an end point in itself.

The analysis that leads to conceptual ordering is an "interplay between the researcher and the data" (Strauss and Corbin 1998: 67) during which categories are allowed to "emerge" from the data. Or, according to Grounded Theory, "the data are not being forced; they are being allowed to speak" (1998: 65).

The conceptual ordering that follows in this chapter is, of course, based on the previous work in the area – on the concepts found in the existing literature on the topic, which have been discussed at length in 2.2.2. Against that background, the findings from our own data were used in order to define our concepts and relate them to each other. In this interplay of the old and the new, an attempt was made not to invent new terminology for its own sake, but at the same time "to see new possibilities in phenomena and classify them in ways that others might not have thought of before" (1998: 105). To this latter end, *in vivo codes* (1998: 105 and *passim*) – names taken from the words of respondents themselves – were occasionally used to capture the salient property of a concept in a novel, yet easily recognizable way.

In reading this chapter, which presents our concepts, their definitions and classifications, as well as illustrative examples, we should bear in mind that "any particular object can be named and thus located in countless ways. […] The nature or essence of an object does not reside mysteriously within the object itself but is dependent upon how it is defined" (Strauss 1969: 20, cited in Strauss and Corbin 1998: 104).

4.1 Directionality

The term *directionality* here refers to direction of translation, more specifically whether translation is done from one's second language into the first (*L1 translation*), or from one's first language into the second (*L2 translation*). *First language (L1)* is taken to mean the language most available to the translator, regardless of chronological order in which it was acquired. *Second language (L2)* is defined here as a language apart from the translator's first language that has been mastered to a high level of competence (that of a "proficient user", see Table 4 in section 3.3), and from and into which the translator is either already working, or might be expected to work, in the course of their professional translation career.

4.2 Translation processes

Translation processes are here defined as a series of strategic or routine actions/interactions that translators undertake to transform the source text into the target text in accordance with the translation assignment, from the moment they start working until they finish (cf. Hansen 2003: 26).

4.2.1 Collaborative translation processes

Collaborative translation processes are translation processes involving a group of people working on the same source text together, making translation decisions based on consensus. Collaborative translation is particularly – although not exclusively – encountered in learning environments.

4.3 Translation competence

Our definition of *translation competence* is taken from Pym (1992: 175), as the "ability to generate a series of more than one viable target text (TTI, TT2 ... TTn) for a pertinent source text (ST) [and] the ability to select only one viable TT from this series, quickly and with justified confidence."

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4.4   Translation problems

Following Livbjerg and Mees (2002 and 2003), *translation problem* is here defined "from the perspective of the participating subjects" as "any word or phrase in the text, or any aspect of such a word or phrase, which is verbalized by any single participant and for which he or she expresses any degree of doubt about its proper translation" (2003: 129), or for which the translator considers more than one possible translation (cf. Pym 1993: 29; Lorenzo 1999: 128).

A problem may be clearly identified as such by any of the participating subjects, as is the case in Example 1, when Sanja [all names are fictitious] asks her team members: "This 'storytelling,' what are we going to say?"

However, a translation problem need not necessarily be as explicitly stated as that. Sometimes the existence of a problem can be inferred from the fact that more than one tentative solution is proposed as a translation for the same ST element, for instance:

I: ...**kao što može biti videno na mnogim**... [as can be seen on many...; passive voice]

[...]

M: ...**što se može vidjeti**... [can be seen...; impersonal form]

Alternatively, a single tentative solution may be proposed, but (at least) one of the subjects voices uncertainty as to its suitability or "correctness". For instance:

I: **Jaka irska**... [Strong Irish...]

S: Lowercase, right?

A single ST element may result in several "problems" in our sense, as Problems 4 and 6, or 2 and 7 from Example 1 below illustrate.

Care was taken to try to delineate problems from the point of view of the subjects, regardless of how many different problems the researcher might see in a given situation. There were, of course, instances in which it was difficult to tell whether a dilemma constituted a single problem or two problems. In our opinion these fuzzy cases were not frequent enough to make a substantial difference regarding the findings.

4.4.1   Problems classified

On the basis of the problems found in the collaborative translation protocols, we decided to adopt the classification presented below. Other classifications are, of course, possible. This one, in our opinion, has the advantage of being workable – it was possible to assign problems to different categories with only a small number of fuzzy cases – and it was clear without the need for elaborate explanations. Some clarifications are nevertheless given below, while the illustrations can be found in Example 1.

4.4.1.1   Orthographical problems

This category of problems refers to situations when the subjects are in doubt about the proper spelling of a word chosen as a solution. Capitalization is included in this category, and so are cases of punctuation that are unrelated to syntax, e.g. whether the year is written with a dot or without (Croatian and English differ in this respect). Other instances of punctuation, such as whether to use a comma before a relative clause, were considered syntactic problems.

4.4.1.2   Morphological problems

Morphological problems are those related to form of the word, such as choosing between various possible suffixes or prefixes.

4.4.1.3   Lexical problems

This category is defined very broadly as a situation in which the subjects are weighing one word or phrase against another or others, as they attempt to decide on the "right" word or phrase that would fit their "target text vision" (see 4.5.3.1). Collocations, idioms, metaphors and names are included in this category.

4.4.1.4   Syntactic problems

This category relates to uncertainty regarding the relations among the words on the sentence level, such as order of sentence elements, word order within sentence elements, subject-verb agreement, the choice of active vs. passive, the choice of plural vs. singular, verb aspect (in Croatian), emphasis, some situations involving tenses and articles (with others belonging to textual problems, see below).

4.4.1.5 Textual problems

These are all the problems involving choices and decisions on the above-sentence level. They include all the changes in the division of the text into sentences, decisions concerning tenses or deictic words that happen on the text level.

4.4.1.6 Other problems

An insignificant number of problems that did not fit any of the above categories were found in the protocols, e.g. those related to text formatting, which were placed under this heading.

Example 1 – Classification of problems

ST segment: Ireland's strong tradition of storytelling dates from this period. It can be seen on many…

M: **Irska**... [Irish]
I: **Irska ①jaka tradicija pripovijedanja** [Irish strong tradition of storytelling / narration]
M [grimacing]: **① jaka tradicija**
I: **①snažna** [strong]
S: **①snažna tradicija**
I: Or **① dugotrajna** [long] or **①izražena**... [outstanding] **①znacajna**... [important / significant]
S: **① jaka tradicija** exists. It is said that way.
M: Is it?
S [nods]
I: **pripovijedanja ② datira** [dates] **iz tog razdoblja**.
M [nods]: Um-h m
I: **② potjece** [dates] **iz tog razdoblja**
S: But then we have to say **③jaka irska tradicija** [strong Irish tradition], and not **③irska jaka tradicija** [Irish strong tradition]
I: OK
M: Yes
S: This ④ *storytelling*, what are we going to say?
M: Maybe **①naglašena** [pronounced] **tradicija**?
I [to S, overlapping]: **④ pripovijedanja** [storytelling / narrating]
S [to M]: **① jaka tradicija** is used, I'm sure, 100 percent
I [nodding]: **① jaka tradicija**
M: OK, OK
S [begins to type]
I [dictating to her]: **Jaka irska**
S: ⑤Lowercase, right?
I: Yes. **④ pripovijedanja**... **prica**... [narrating of stories]
M: **⑥ pripovijedanja**
S: **⑥ pri-po-vi-je-da-nja**
I [nods]
S: ④We don't need **prica** [stories]. It's implied. The skill of...
I: Ok. **potjece iz tog razdoblja**.
S: **⑦ potjece**?
M: **⑦ po-tje-ce**
I: **⑦ potjece**

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S [typing]: **iz**
I: ⑧ **tog** [that] **razdoblja**
S [typing]: ⑧ **toga** [that]?
I [looking at M. for confirmation]: ⑧ **tog**
M: ⑧ **tog**
I: ⑧ **tog**
S: Aha. I never know that.
I: I go by the ear.
S: Um-hm. [reading the TT from the screen] So: **Jaka irska tradicija pripovijedanja potjece iz tog razdoblja**.
I: And now I would in fact ⑨ put a comma...
S: Yes.
I: ⑨ **kao što može** ⑩ **biti videno na mnogim**.. [as can be seen on many...]
S: There, you see! Short sentences are merged.
I: *Yes, yes*, fine.
S: Yes.
I: I had nothing against long sentences, as long as it's not too long s o that you can...
M [overlapping]: **što** ⑩ **se može vidjeti**

Example 1 shows an excerpt from the collaborative translation protocol of Group C working on their L1 translation of the English text, more specifically the sentence "Ireland's strong tradition of storytelling dates from this period." The sentence is short and the translation proceeds relatively smoothly, the whole exchange lasting about 90 seconds (minutes 51-52 of the protocol). However, there are as many as ten distinct "problems" in this short section, and all the five types of problem from our classification are represented. Each will be discussed in turn as they exemplify rather well our classification of problems.

Problem 1: The first problem arises in connection with the collocation "strong tradition". This very frequent English collocation (a Google search results in nearly a million hits) does not translate easily into Croatian. The adjective "jaka," strong, in connection with "tradicija" is not so common, as testified by the fact that this comes across as a problem in the protocols of all the four groups and in the IPDRs accompanying many group and individual translations in the control experiments. Here the subjects verbalize six tentative solutions before finally settling for the first proposed, "jaka," after Sanja convinces the rest of the team that it is "said that way" (see 4.9.1.5). According to our classification, this type of problem belongs to *lexical* problems – choosing the word or phrase that best matches the translators' "target text vision".

Problem 2: This is another lexical problem, and it concerns the ST element "dates". Two tentative solutions are proposed: "datira" and "potjece". The two words are, in this context, very close in meaning, except that the former is a loan word and the latter a "proper" Croatian word. Although both would be acceptable translations, the former might be slightly more suitable for specialized texts than for a travel guide. Irena

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first uses the cognate, then corrects herself (cf. Shlesinger 2005) and proposes an alternative solution, which is accepted by the others without objection.

Problem 3: This problem is *syntactic* in that it concerns word order. Once the 's genitive "Ireland's" has been translated with the Croatian adjective "irska" (which in this group was done automatically), the "literal" word order no longer works that well, as pointed out by Sanja. She proposes an alternative solution, which the other two accept.

Problem 4: This is another lexical problem, and it concerns the translation of the English word "storytelling". As is the case with all the other units discussed in this segment, this does not appear to be a problem of comprehension but rather one of production. Sanja asks the others: "This 'storytelling,' what are we going to say?" "Pripovijedanja" and "pripovijedanja prica" are proposed as two tentative solutions, and the former is adopted as the selected solution with the explanation that the latter is redundant (Sanja says: "We don't need 'prica'. It's implied.")

Problem 5: Sanja is ready to start typing the first part of the sentence as agreed on by all the members of the group. She is now faced with a new problem, this time of orthographic kind, as she is unsure whether the adjective "irska" should be capitalized or not (such adjectives are capitalized in English, but not in Croatian). She runs her tentative solution ("lowercase") by Irena, who confirms it.

Problem 6: This problem is again orthographic, and concerns the correct spelling of the Croatian word "pripovijedanje". This is a typical spelling problem in the Croatian language and Marija, knowing this, makes a point of warning Sanja about it.

Problem 7: This problem is very similar to Problem 6 in that it concerns Croatian orthography. Again Sanja runs her tentative solution by the other two, who confirm it.

Problem 8: This problem belongs to the group of problems we have classified as *morphological* problems. Two alternative forms of the Croatian demonstrative ("tog" and "toga") are considered. This is another typical problem, even for educated L1 speakers, as witnessed by Sanja's words when she says: "I never know that", and Irena's comment: "I go by the ear."

Problem 9: The next problem in this section belongs to what we are calling *textual* problems. The ST sentence ends after "this period," and a new sentence begins with "It [i.e. Ireland's strong tradition] can be seen…" Irena proposes merging the two sentences together, which is readily accepted by Sanja, who refers to their previous disagreement on "long sentences".

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Problem 10: Finally, while Sanja and Irena are discussing long sentences, Marija proposes an alternative solution to Irena's translation of "can be seen". Instead of the "literal" passive construction "može biti videno," which does not work too well in Croatian, she suggests 'se može vidjeti," an impersonal form (cf. Spanish "se puede ver") that is more in keeping with the target language norms of usage. This last problem has been classified as syntactic.

4.5   Solutions

4.5.1   Tentative solutions (tS)

Tentative solution is any segment or aspect of the target text proposed by any of the participating subjects as a possible way to resolve a "problem" (as defined above). Sometimes only one tentative solution was proposed and accepted as the selected solution, with or without discussion. Other times, as many as 22 tentative solutions for the same problem were put on the table and debated.

4.5.2   Spontaneous solutions (spS) vs. solutions from external resources (xS)

Our collaborative translation protocols show that some solutions were proposed spontaneously, from "internal resources," while others were found in "external resources" (see 4.6.2). There were three different types of *spontaneous solutions*. Some came across as "purely spontaneous," that is, they were completely unrelated to external resources. Other times, they were produced spontaneously, but after the subjects had consulted an external resource. The solution was not found in the external resource but rather "inspired" by it. For example, the subjects would find an explanation of an English word in an English monolingual dictionary and then come up with a Croatian translation. Finally, some tentative solutions were proposed purely spontaneously, but afterwards confirmed in an external resource.

4.5.2.1   Fluency quotient

Fluency is defined as the ability to produce (a large number of) tentative solutions for a given problem by relying on internal resources (cf. Kussmaul 1991: 95, who builds on

Guilford 1975: 40; Ulmann 1968: 45; Preiser 1972: 60; cf. also Dancette's "translation variations" in 1997: 103).

In our analysis we divided the total number of spontaneous solutions proposed during a collaborative translation task by the total number of problems. We called the resulting number of spontaneous solutions per problem *fluency quotient*.

4.5.3   Selected solutions (seS)

Selected solution is any segment or aspect of the target text selected by the translator(s) as the final translation of a "problem". When we say "final," we do not mean that any of these solutions "resolve" the translation problem in any definitive way. We simply mean that the subjects committed themselves to these solutions in the sense that they were found in the versions of the translation that the subjects handed in at the end of the task.

In collaborative translation, selected solutions are typically considered to be the "best" solution for a particular problem that the group can come up with in a particular translation task. They are generally the solutions that all group members can "live with," regardless of what each one of them might have argued for during the decision-making process.

4.5.3.1   Target text vision

Target text vision is defined as the translator's mental image or an idea of what the optimal version of the target text should look like (cf. Holmes 1988: 96, cited in Hönig 1991: 77; Tirkkonen-Condit 2000: 125; Hansen 2003: 28-29). There is, clearly, no direct evidence that a target text vision actually exists, but it seems conceivable that translators monitor the various tentative solutions against their idea of the target text that they would like to produce. It is equally clear that the target text vision, if anything like that indeed operates, has no objective existence outside the translator's mind.

4.5.3.2   Optimization quotient

By *optimizing* we refer to the translators' efforts to produce what they perceive to be "the best" possible target text under the circumstances. In this study, one of the possible indicators of these efforts is taken to be the *optimization quotient*. This number shows which of the proposed tentative solutions – "in order of appearance" – is on average

chosen as the selected solution. A higher number indicates that the translators tended to choose "later" solutions rather than "earlier". A high optimization quotient shows greater "dissatisfaction" with the tentative solutions arrived at so far, and of a desire to keep looking until a satisfactory solution is arrived at. It could be regarded as a measure of more stringent output monitoring. It is also related to fluency, or the ability to produce more solutions to choose from in the first place.

4.6   Resources

A *resource* is here defined as a source of aid or support that may be drawn upon when needed. Resources can be divided into *internal* and *external*.

4.6.1   Internal resources (iR)

Internal resources are all the resources the subjects possess internally, without recourse to objects in the outside world. They are made up of the subjects' past experiences, competences and (procedural as well as declarative) knowledge stored in the long-term memory. In collaborative translation, the subjects draw on each other's, as well as their own, internal resources.

4.6.2   External resources (xR)

The external resources that the subjects used in the experiments of this study can be classified as in Figure 5. The main division is into electronic and printed resources. Both categories can include dictionaries, encyclopedias, and parallel texts. Printed resources additionally included a Croatian spelling manual, while the English spelling checker is included among the electronic resources. Dictionaries can further be divided into bilingual and monolingual, the latter category comprising learners' dictionaries, dictionaries of collocations and encyclopedic dictionaries. The subjects did not use thesauruses or specialized dictionaries.

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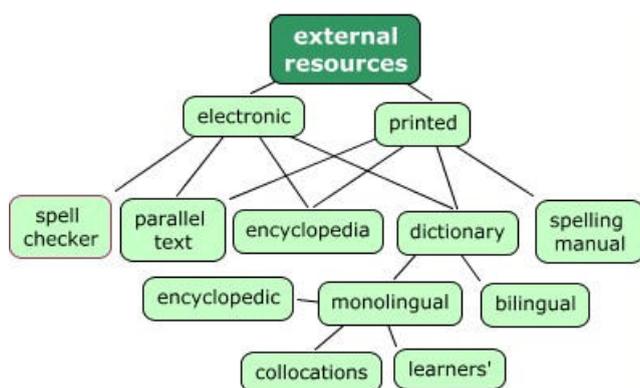
Figure 5 – Classification of external resources used in the experiments

4.7 Revisable TT elements

A *revisable TT element* is here defined as a segment or aspect of the target text that, according to the external evaluators, either has to be revised or could benefit from revision (see 3.7.2). Hence there were two types of revisable elements, those which got a "red card" and those which got a "yellow card".

4.7.1 Red card

A *red card* is the external evaluators' intersubjective judgment that a segment or aspect of the target text is unpublishable in its present form, whether because it distorts what the evaluators' perceive to be the plausible interpretation of the source text, or because it contains an unambiguous target language error (of whatever kind).

For example, the Croatian source text uses "historical present" to describe the events that took place in the period of Croatian history between the 9^h and 11th centuries. In the English translation, the evaluators considered the use of past simple to have been more appropriate, and marked all instances of present simple in red. This was counted as a single revisable element, since the verbal protocols indicate that the decisions on which tense to use were made on the textual level rather than separately for each occurrence.

Another example, from L1 translation, is the translation of "Norse" as "Norvežani" ("Norwegians") or "Normani" ("Normans"), both of which are historically inaccurate.

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4.7.2   Yellow card

A *yellow card* is the external evaluators' intersubjective judgment that a segment or aspect of the target text, while perhaps publishable, could benefit from revision.

An example from L2 translation would be the evaluators' opinion that it would be a good idea to add the word "rivers" with the names of the two local rivers mentioned in the Croatian text, as they may not be well known to the target reader.

An example from L1 translation would be the translation of "rustic missionary" as "seoski misionar," which the evaluators deemed to be an unusual and perhaps even slightly ambiguous collocation, but not so strange or wrong as to be unpublishable.

4.7.3   Revisability score

To facilitate quantitative comparison, instances of "red card" were counted as one negative point, and of "yellow card" as half a point. The resulting number is what we are calling *revisability score*. A lower revisability score indicates a "better" translation product. As has been pointed out a number of times in this work, the remarks about translation quality should not be understood in an "objective" sense.

4.8   Actions/interactions

Actions/interactions are defined, after Strauss and Corbin (1998: 133 and *passim*) as the ways in which the subjects handle the situations, problems and issues they encounter in the (translation) process. They are all the strategic or routine responses made by (each member of) the group to the translation situation (cf. Strauss and Corbin 1998: 128).

Based on our collaborative translation protocols, the following actions/interactions have been singled out as the most relevant for creating the group profiles:

4.8.1   Reading ST

The subjects are observed to read (parts of) the source text, either silently or aloud.

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4.8.2   Reading TT

The subjects read (parts of) their translation, either silently or aloud. Typically one group member, the "typist," reads the target text to the others. Parts of already produced target text are read for output monitoring but also, in the subjects words, "to get ideas" for those elements that have not yet been translated.

4.8.3   Proposing tentative solutions

The subjects propose tentative translations for particular segments or aspects of the source text.

4.8.4   Consulting external resources

The subjects are observed consulting external resources, either printed or electronic (see 4.6.2).

4.8.5   Postponing the final decision

This action/interaction refers to the situation when the subjects put off the making of the final decision regarding a translation problem until a later time. Instead of committing themselves to a particular solution, they decide to go on and "revisit" the problematic part later, as in the following example:

> S: This "*no later than*" we'll have to *revisit* later. It's so strange. [to M.] This "*no later than*".
> I: We'll do it later.

Several types of postponement have been observed in the protocols:

4.8.5.1   Slash

This is an *in vivo code* (see 4.0) for the situation when the subjects write down more than one tentative solution in the target text, separated by a slash (/).

> V [overlapping]: Why don't you write both for now...?

M [overlapping]: ... a draft version first...

V [overlapping]: Yes, yes

M [overlapping]: ...and then we'll read it through and see how we feel.

V: Yes, good.

M [preparing to type]: So what did we say? **širenje**... Shall I write it like that?

V: Yes, yes. Write both, with a *slash*. Both **širio** and **donio**.

4.8.5.2 Highlighting

A tentative solution is written, but highlighted or marked in a certain way for future reconsideration.

M [putting 'OADL' away]: It doesn't matter, [let's put] a question mark, let's not get [stuck on that]. Maybe later when we look at it, maybe we'll... when we go through the whole thing and get to that, maybe we'll know immediately what would be better. As it is, we'll just get stuck and we won't do anything.

4.8.5.3 Leaving the ST element in the TT

The problematic ST element is left untranslated in the TT until a later time. In our protocols, the subjects were sometimes observed doing this orally, while still working on a sentence, as in the second example below.

ST segment: The Norse tyranny was destroyed […] by the most celebrated of the High Kings, BrianBorú, who saw himself as the Ireland's Charlemagne.

S [reading the TT]: **Vikinšku tiraniju uništio je najslavniji od** *High Kings* **Brian Boru, koji se smatrao irskim Karlom Velikim**... Great!

ST segment: Kršcanstvo se medu Hrvatima širilo iz razlicitih središta […] posredstvom franackih i bizantskih misionara…

I: And how about *it spread from different centres through... through* **franacki i bizantski misionari**?

4.8.5.4 Leaving a gap

A blank spot is sometimes left in the target text where the as yet unknown solution should go.

4.8.6 Typing TT

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One of the group members types the version (or versions) of the target text that has been agreed on. Often what they write down is not the final version but the subjects want to "see what it looks like" (cf. Tirkkonen-Condit's "auditioning" in 2000: 126f) or they write it down so that they "don't forget it" (see 4.9.6).

4.8.7   Joking

An important action/interaction in the collaborative translation protocols is joking. As will be reported in more detail in section 5.6, it seems that for all groups joking was a way of maintaining a positive, creative and cooperative atmosphere conducive to free associations and brainstorming, and one in which differences of opinion were less likely to be perceived as face-threatening (cf. Kussmaul 1995: 48).

4.8.8   Seeking or offering opinion or information

An important action/interaction in the collaborative translation protocols is the exchange of ideas and discussion of problems and the different solutions that are proposed. This action/interaction is dealt with in detail in 4.9.

In addition to the above actions/interactions, which were all task-related (including 3.7.1.7), the protocols revealed a number of non-task-related actions/interactions, such as eating cookies, drinking juice, and talking about things unrelated to the task at hand.

All of these actions/interactions were found in protocols of all groups and in both directions, albeit with different distribution (see 5.6).

4.8.9   Group profiles

Group profile is a description of the way a group of subjects translate, based on the (combination of) predominant actions/interactions that characterize that group's style of working on a given task.

4.9   Verbalizations

If by actions/interactions we mean everything that the subjects are observed to be *doing*, *verbalizations* refer to everything the subjects are heard *say* to each other in the collaborative translation protocols (not including "reading aloud"). Speaking, of course, is itself an action/interaction, so that verbalizations could be considered a sub-category of actions/interactions (see 3.7.1.4). However, given the importance of verbalizations in verbal protocols, it was deemed more useful to treat verbalizations as a separate category.

In our collaborative translation protocols, we observed verbalizations related to: tentative solutions, resources, problems, the source text, the task at hand and group performance, actions/interactions, verbalizations related to self, interpersonal, task-related verbalizations and verbalizations that were not directly task-related (see Figure 6). Each type will be dealt with in more detail in the next sections.
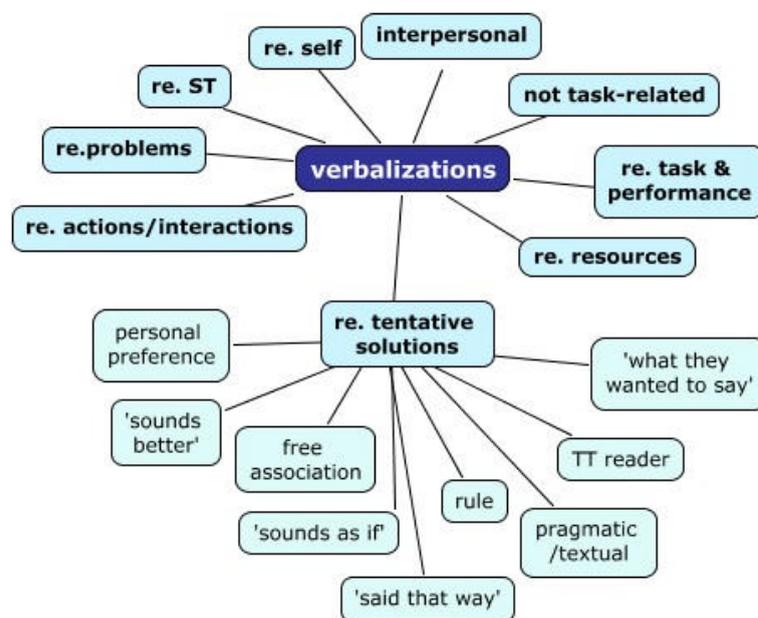
Figure 6 – Verbalizations classified

4.9.1   Verbalizations related to tentative solutions

This is by far the largest group of verbalizations, and it refers to everything the subjects say in the course of their *output monitoring*, i.e. while they are evaluating (cf. Tirkkonen-Condit 2000: 126f) or assessing the proposed tentative solutions. We use the

term monitoring rather than "evaluation" or "assessment" in order to avoid confusion with quality assessment or evaluation of the final products, which was done in this study by external evaluators.

The verbalizations related to tentative solutions can be classified as in Figure 6, based on the type of argument the subjects resort to in their monitoring. In the sections that follow we explain each category and offer examples.

4.9.1.1 Personal preference

The subjects verbalize their general personal preference for one (type of) solution. Other researchers (e.g. Hansen 2006: 24) have noticed that translators' decisions are sometimes influenced by their "liking" or "disliking" particular words, phrases or structures in the TL. Here are some examples from our protocols (both from L2 translation):

a)	S: I like *of-phrases*, but within limits.
	M: I'm allergic to *of* [phrases] and I always try to avoid them...
	S [overlapping; looking at the TT on the screen]: I generally like them, but if they are not needed…
	M: Because to me they sound childish... Those sentences with many *of-phrases* sound as if they were written by a child.

b)	M: I like this, *Frankish*. I like that word.

The preference verbalized in the first example above helps explain one red and one yellow card that Group C got in their L2 translation.

4.9.1.2 "Sounds better"

This group of verbalizations is epitomized by the proverbial "this sounds better" all translators and translation teachers are familiar with. The subjects often verbalize their attitude towards one or another tentative solution in vague terms, such as "good," "better," "strange," "funny," "clumsy," "silly," "iffy," "great," "nice," "disastrous," "horrible," "like," "don't like," "works," "doesn't work," "would (not) fit," and so on. Other expressions characteristic of this group are "maybe," "perhaps," "I don't really know," "I have no idea," "somehow," "I can't explain," "I can't put my finger on it," and so on (cf. Robinson's somatics in Robinson 1991). Non-verbal expressions such as

grimaces, smiles and nods are closely related to this category of verbalizations, either accompanying the verbalizations or, occasionally, standing in their place. Here are some examples:

Examples from L1 translation:

---

a) S: Something sounds wrong but I don't know what.

    M: There's something wrong, isn't there?

    S: There's something... Like you say, but I can't *pinpoint.*

    M: This **zvonici**... The case is... I don't know.

    S: Which part do you find wrong? I also feel something is wrong, but I can't even pinpoint which part.

---

b) V: **pružila** is perfectly OK. It sounds good to me.

    M [overlapping]: Like this it doesn't look... Yes, to me, too. It's not that bad at all. Although at first it sounded awful.

    V [laughs]

Examples from L2 translation:

---

c) N: That's the least painful.

    M: Well, yes!

    V: It's good like that.

    N: It's fine like that.

    M: It sounds all right to me.

    V: There you go.

---

d) S: But *national rulers*, that's kind of... Maybe it's possible, I don't know. It sounds strange.

---

e) N: I like *describe.*

    M: *describe* works.

    V: *describe* is better.

4.9.1.3 Free associations

This group consists of verbalizations in which a tentative solution evokes a free association. Here are some typical examples:

Examples from L1 translation:

---

a) M: **utocišta** [refuges, sanctuaries].

    N: What was it that Quasimodo shouted...? While he was in the church...

    M: *Sanctuary, sanctuary*!

    N: Ah, yes.

Examples from L2 translation:

b)	I: *to be called king*, in brackets, *rex*
	S [laughs]
	I: *Rex, the dog*
	S: *Yes.*
c)	I: *of the mighty... Mighty Max.*
d)	S: *on the Dalmatian coast. 101 Dalmatians.*

4.9.1.4 *"Sounds as if"*

This group of verbalizations is similar to the previous in that a tentative solution makes the participants think of something. Here the association is more closely related to the task at hand, in the form of arguments which serve to explain what a particular tentative solution would mean to them, what kind of connotation it has for them, or in what kind of situation they think it would be used. The examples will help clarify the difference between free associations and this group of verbalizations:

Examples from L1 translation:

a)	S: I think it's **držali**. Because **cuvali** would mean that they sat on the chests and looked after them.
b)	M: Because...
	S: It sounds as if the boats were from Scandinavia. Yes, that's exactly it!
	I: Yes.
c)	I: Do we have to say **skupine Vikinga**?
	M: Man, that sounds like a sports team!
d)	I: **tiranija sa sjevera** [tyranny from the north]
	S: That sounds as if it had been brought in by the wind [laughter].
e)	M: That sounds as if he was walking through the forest and [waving her hands expressively] la-la-la… Get it?
f)	M: In Croatian it sounds too literal.
	V: Yes. As if he were going through the woods...
	M [overlapping]: ...remote areas, but where there are people. In Croatian it sounds as if he were really going through the thicket and preaching.
g)	M: **šuma** [forest] can't be **zarasla**. I mean… It's, like, **zarasla**, and it has to shave.
	S: That was my first association, too.
h)	M: **pretežno** makes me think so much of a weather forecast that…
	S: Weather forecast, you're right.

i)   I: If you say **kroz Francusku i Italiju**, then it's [indicates a straight line with her hand] through.

S: Like he accidentally passed through.

I [indicating a circular route with her hand]: And this is like he went...

S: Like in that cartoon, when the coyote… When they show a map with…

---

j)   M: I wouldn't say **u nedostatku**, because that would be like they ran out of...

S: [chuckles]: Yes, that's right.

M: But I would say maybe **u odsutnosti**, or something like that... **nedostatak** is, they ran out of foundations.

S: Yes, it has a kind of negative connotation.

M: They ran out of stone, they no longer had any, and so they stopped building.

[..]

S: And what about **u odsutstvu**?

I: It's more like somebody's gone on holiday.

M: It's more of people.

Examples from L2 translation:

---

k)   S: *intense*. It's not *intensive. intensive care*.

I: All right.

---

l)   S: I'm thinking *growth*, but that's different, that's **rast**, an economic term.

---

m)   M: Maybe there's a better word, apart from *neglected*? That's more like...

S: *children*

M: Yes

S: *neglect* is of a young person. Leave it to die. I'm morbid, I know.

---

n)   M: Maybe *invade*?

S: Nah, that's violently. This is just... [shrugs]. You know, they came, they took...

---

o)   M: Maybe *strengthens its position.* This *secures its position* sounds a bit as if we fought a war there with someone. I mean, we did...

V: Sorry?

M: When we say *secure* it's as if we pushed somebody away. And *strengthen* might be...

---

e)   M: To me, *military force* is like an army. It sounds as if it were an army.

4.9.1.5   *"Said that way"*

This group consists of arguments evoking target language (TL) usage. Something is (or is not) "said" in a particular way; a certain word or, especially, collocation is "used" or is "in the spirit of" the TL. A word or phrase "exists" or "doesn't exist," the subjects "have (never) heard" of it, they "have (never) used" it. The key notion is whether something is "usual" or not. Here are some examples:

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Examples from L1 translation (discussions of the same problems from the protocols of two different groups are given):

ST segment: …to spread the word of Christ…

a) I: ...**kako bi širio Kristovu rijec**… [to spread the word of Christ] How is that said?

   M: **kako bi** [in order to]

   I: **širio rijec Božju** [spread the word of God]

   S: [nodding] um-hm.

   S: That's a bit more in the spirit of Croatian.

   M: Yes.

   S: I think we say **rijec Božju** [word of God], and not **Kristovu** [of Christ]

   M: Yes, yes.

   S: And they have this [expression].

   M: **Rijec Božju.**

   S: [overlapping] **širio**. Or **Božju rijec** [God's word] whichever is more usual.

   M: **Rijec Božju** [word of God]

   I: **Rijec Božju.**

b) N [overlapping]: **432. kako bi širio**... **Kristovu**... I don't know how [to say]... **rijec**, but it's not really...

   V: **radosnu vijest** [the glad news]

   M: Yes, how would that...?

   N: **Kristova**...

   M: Yes, we would say **radosna vijest**... [the glad news]

   N [overlapping]: There is [an expression].

   M: **Kristovu nauku**? [Christ's teaching]

   N: Um-hm, that's possible.

   V: **Kristov nauk**. [Christ's teaching]

ST segment: …exquisitely illuminated manuscripts…

c) V: It is said that way, **iluminirani**

   […]

   V: **Iluminacija**

   M: Is that what it's called?

   V: Yes. I remember it from primary school.

   M: If that's what it's called, then...

---

d) S: Are you sure about this **iluminirani**?

   I: Yes, yes.

   S: Because I can't say I have used that word all that often...

   I: I think it exists. **Iluminacije.**

   S [overlapping]: ...so I can't claim for sure.

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Examples from L2 translation:

e)	I: I'd put *extreme*
	S: That's, yes, that's a collocation, *of extreme importance*
	M: Yes
f)	M: That [adjective] is used of a path.
g)	S: You can use that of people, not of areas.
h)	N: I have never seen it in any text before.
	V: Me neither.
i)	M: I know that Bush is always yelling about the *military power of the U.S.* so it's ringing a bell.

4.9.1.6 *"Rule"*

These are the verbalizations in which orthographical, morphological or syntactic "rules" are either explicitly mentioned or alluded to. The key notions here are "correct" or "incorrect".

Examples from L1 translation:

a)	V: Which is more correct, **podrijetla** or **porijekla**?
	M [looking at the screen]: I don't know.
b)	N: The construction with **da** should be avoided.
c)	V: Wouldn't singular be better? **svoje blago**. I mean...
	M: Well, yes.
	N [nodding]: Um-hm.
	V: If it's **kraljevi**...
	M: In Croatian it doesn't have to be plural.
	V: That's it.
d)	M: You have to insert it between the commas. *Non-restrictive*...
	S: But we can't put a comma and then **poput**, because **poput** goes without a comma. Get it?
	M: Are you sure?
	S: Yes, 100 percent. **kao** goes with a comma, and **poput** doesn't.
	M: All right.

Examples from L2 translation:

e)	S [looking at the TT on the screen]: But it think it should be *THE characteristics of a modern European state*. Because you're saying...
	M [overlapping]: *of-phrase*
f)	S: Then there's no article, because *power* is an abstract noun

g) S: *the then* is used as an adjective, yes.

---

h) M: And we have the Past Perfect in the same sentence [laughs]. To have the Present, and then the Past Perfect, that would be [laughs].

---

i) N: Why *or*?

M: Because *as well as* is for very positive sentences.

[…]

M: If the sentence is negative, can you use *nor* if you don't have *neither* before that?

V: Right.

M: Probably not.

V: According to the rules, I think not.

4.9.1.7 *Pragmatic / textual reasons*

In this category, the arguments have to do with text-linguistic or pragmatic notions such as cohesion, coherence, consistency, redundancy, style or register. Even though the participants generally do not explicitly mention these terms, there are some clues in the verbalizations that place them in this category, such as "too long," "informal," "formal," "to connect it with what we had before," "to avoid repetition," "to emphasize it," and so on. Again the examples will help illustrate the point:

Examples from L1 translation:

---

a) M: And what about if we said, also with the intention of sounding like a fairy-tale, **širio** whatever **neutrtim putevima** [untrodden paths] or something like that?

V: Something like that, yes.

M: I don't know, but it seems that it should be something as fairytale-like as they have [as it is in the ST].

V: Yes, yes.

N: Um-hm.

---

b) V [pointing at the TT sentence on the screen]: There are too many things inserted. […] When you look at it, it's all cut up.

N: It's too much, yes.

---

c) S: Or **mnogi od tih tornjeva** [many of those towers], I don't know. To connect it to what we had earlier.

M: All right

---

d) I: I think, because the [previous] sentence is longish, it would be easier to say **Brian**... **Boru** […] In this previous sentence you don't know who is doing what to whom, and then **on** [he] could be **Karlo Veliki**

---

e) M [overlapping]: Like this it's scattered... […] That's the way I'd perhaps [do it]. So that it follows, and we have some kind of continuity.

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M [pointing at the TT on the screen]: But, you know, it's too far away...

S: Yes.

M: ...because at the beginning we have **uništio je vikinšku tiraniju** and then blah, blah, blah, blah, blah, and then only in the end do you have the battle and the year, you know.

---

f)	S [overlapping]: Yes, maybe it's better to say **središta okupljanja** first because of the emphasis...
	S: That's it. **postali su samostani**. That's better, because it's emphasized. Yes.

---

g)	M: To connect [the two sentences]. That sentence would look much...
	V [overlapping]: To me... I'd continue it.
	M: It would flow much more smoothly.

Examples from L2 translation:

---

h)	M: *Dalmatian cities*
	I: *towns.* We said *towns.*
	M [overlapping]: Because earlier we called them *towns.*

---

i)	M: How about we put it all in the *Past...*
	S: We can do that, too
	M: ... because some of the [ST] sentences are in the Past and some are in the Present...
	S [overlapping]: Yes, that would be better, you're right.
	M [overlapping]: ...so that we are consistent throughout
	S [overlapping]: Yes, we have to be. So shall we [use] the *Past*, then?
	M: I'd be in favor of that.
	I: Me too.

---

j)	S: I would put a full stop here. Um... Because look at how long the sentence is.

---

k)	M: To make it a bit more formal

---

l)	M: This *till* sounds somehow informal to me.

4.9.1.8 TT reader

This group of verbalizations is related to the previous one in that the considerations are pragmatic. Here, however, the reader of the target text is explicitly mentioned and used in deciding about selecting a particular tentative solution. All the examples in this group are from L1 translation.

ST segment: …bands of Vikings, who sailed to Ireland in their high-prowed ships from northern Scandinavia.

---

a)	I: An average Croat would not make a distinction between **banda Vikinga** [band of Vikings] and **vikinška banda** [Viking band].

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b) I: **u svojim karakteristicnim brodovima** [in their characteristic ships]

S: Yes, because more or less everybody knows... every educated person knows what a Viking ship looked like.

M: Well...

S: You know, you take a history book, open it up and leaf through it a little.

c) M: One would assume that if someone is reading this that they know what **sjeverna Skandinavija** [northern Scandinavia] is.

ST segment: …the most celebrated of the High Kings…

d) I: And how about we write **najslavniji irski kralj**? [the most famous Irish king]

S: Yes.

M: Well, yes. There's nothing else...

I: To an average Croat...

S: Absolutely!

M: It doesn't mean anything anyway...

S [overlapping]: It's not important what kind of kings are *high kings*, are they *especially high…* [laughter] as if they were *tall*. So **najslavniji irski kralj**, right?

I: Yes.

M: Yes.

S [typing]: Well, yes, to a...

I: ...an average... I mean...

S [overlapping]: Yes, you're right.

I [overlapping]: A king of one kind or another...

ST segment: Also surviving are some of the monks' exquisitely illuminated manuscripts…

e) N: But do the average readers know that, what [**iluminacija**] means?

M: Well, if they are going to Ireland and are reading this...

[laughter]

[…]

V: Because it's ornamenting the initials... I don't know. Maybe you [N.] are right, maybe we could... Maybe they are going to Ireland and they don't know it. [laughs]

[…]

M: **sacuvani su i neki od prekrasno**... **iluminiranih**... [preserved are also some of the beautifully illuminated]

V: No, that will sound to people [the TT readers] as if they were lit up... I mean, *What*? […] Because OK, we do know, but...

N: Yes.

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4.9.1.9 *"What the author wanted to say"*

In arguing for or against a tentative solution, the subjects sometimes refer back to the source text, either to seek or offer explanations of particular ST elements, or to interpret what they perceive to be the ST author's "intention". The group jointly constructs the "meaning" of the ST and its parts. This "meaning" is used as an argument in monitoring (parts of) the target text. Like this:

Examples from L1 translation:

ST segment: …he traveled widely in France and Italy…

a) M: Does this *travelled widely* mean that he traveled **širom Francuske i Italije** [all over France and Italy] or that he traveled **puno** [a lot]?

V: I think it can be either.

M: Yes, but I don't know whether it refers to...

[…]

M: If they had meant **širom** [all over], would they have said *he travelled widely THROUGH France*, or...?

ST segment: …a largely peaceable people, though there was intermittent feuding between various provincial kings.

b) M: It's like... It's like those drug lords, who have their areas...

N: Yes.

V: Yes.

M: **podrucnih**... **vladara** [local rulers]. No, I mean, that's the basic meaning of the word.

N: Yes.

[…]

M: **kraljeva** [kings]? Were they...? They were **kraljevi**, weren't they? [types]

V: Um-hm.

M: Well, yes. Every one of them had their king... I mean, their province. Ok.

c) M: Do they mean **ljude pojedinacno** [people as individuals] or **narod** [people as nation]?

I: **ljude**. The people who lived there on that island were peaceful 90 percent of the time, and then they would start fighting. Because there were those feuds.

ST segment: In the absence of a Roman substructure of towns and cities, monasteries became centres of population.

d) N: What is *substructure*?

V: I don't know.

[…]

N: So it's some kind of special... or...?

M: No, but there were no...

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V [overlapping]: No, no, no...

M [overlapping]: There were... There were no [towns or cities]

[…]

V: No, no, it's not that. But that would be **infrastruktura**, I think, which... The Romans left a heap of things...

M [overlapping]: There they didn't do anything...

V [overlapping]: ... where the cities/towns developed it was... The basis was what the Romans built and the rest...

M [overlapping]: And they were not there, so...

[…]

N: Wouldn't they have written *infrastructure*?

---

e) S: But it's not **infrastruktura**. *Substructure*.

I: What is it, then?

S: I've no idea. *Infrastructure* exists in English, and *substructure* is obviously something else.

I: Because there were no cities or towns, like in Rome... like a subdivision of the state into some kind of... [sighs]

S: **Infrastruktura** is not...

M: We know.

S: It's within a city.

I: But roads are part of...

S: Are they?

I: ...infrastructure.

---

f) S: I don't know whether he's comparing it to Rome […] or if he means Rome – I find that very confusing.

I: He wants to say that the Romans didn't get as far as there…

S: Oh, right!

I: …and they didn't set up their roads, their cities, their aqueducts…

---

g) N: *population*. Does it have any other meaning?

V: Right.

M: **središta naseljenosti** [concentration of population]

V: Yes.

M: They gathered around them.

V: That's what [it means] to me, too.

ST segment: …Brian Boru, who saw himself as Ireland's Charlemagne. But he himself died in the battle as he was praying for victory.

h) M: I don't know what they wanted to say with this *but*.

V: Right.

M: It's like... He thought he would give them a good hiding, but then... *But he himself died in the battle as he was praying for...*

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i) V: But was he only praying? Was he praying and fighting, or was he just praying and waiting for others to get killed? [laughter] You see what I mean.

M: You mean did he charge and pray at the same time? I think he was just sitting and praying.

V: Then it's **umro** [died of natural causes].

M: But he didn't **umro** if he got hit by an arrow or something. I mean, he did die but...

ST segment: …to spread the word of Christ through the trackless forests.

j) M: Um... But *trackless* doesn't mean **neprohodan** [overgrown, impenetrable]. It's just that no one has passed through there, there are no paths...

V: Yes, exactly.

M: But that's not really...

[…]

V: There wasn't a path through it yet.

M: Yes. We need a word that would mean that no one has...

V: But I'm wondering how to express that figurative meaning, that is, where no one has yet...

M: Yes, figurative...

---

k) I: What I think he wanted to say by this *"trackless forests"* is that this was an island full of trees, there were no roads, there were no… I mean, this is 432.

ST segment: …manuscripts, such as the Book of Kells, which the Vikings, being unable to read, ignored.

l) M [To I.]: *being unable to read*... **nisu mogli** [were not able to]. How do you mean **nisu mogli**? It... It sounds as if...

S [overlapping, unclear]: As if they couldn't

M: As if they physically couldn't...

I: All right, **nisu znali** [didn't know how to]

M: As if they were blind and so they couldn't

S: Or as if they couldn't read only that particular book, for some reason.

I: No, they couldn't read it because they didn't know the Latin script.

S: Ah, that.

M: The thing is... Yes.

I: They had the runes and all that. And they knew how to read that.

S: Aha.

I: But they didn't know the Latin script. Because they were not in contact...

M: In any case, **nisu znali procitati** [didn't know how to read]

I: **nisu znali procitati**, yes.

M: And this refers to those manuscripts. In fact, the manuscripts survived because the Vikings didn't know how to read them and so...

I: They were unimportant to them.

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M: Yes.

[…]

M: **ostavili** [left]

S: It sounds as if they left them somewhere and went away.

I: They did, more or less.

M: They did, in fact.

I [waving her hand dismissively]: "Ah, a book!"

M [overlapping]: ...because they were plundering and taking what was of value to them, and as to books, "what are we going to do with a book, and besides we can't read it," and then they left it.

S: In that case, OK.

Examples from L2 translation:

m) N [reading the ST]: **od posljednje cetvrtine**... [from the last quarter]

M: What does that mean **od po**...? What does it refer to?

N: Their influence.

M: Hold on, what did we say...? They went [on their mission] from the 860s, right?

n) I: What do they want... what do they mean by this **najkasnije u IX. stoljecu** [in the 9th century at the latest]?

S: That means...

I [overlapping]: As in no later than...?

M [overlapping]: **najkasnije u IX**....

S [overlapping]: ...basically...

M [overlapping]: It is not known when exactly, but no later than the 9th century...

I [overlapping]: Right.

M [overlapping]: ...it became an independent state

S [overlapping]: It could have been before that, but that was at the latest. As far as they know from historical...

o) N: What exactly did they mean by this?

V: What do they mean in Croatian [in the ST], yes.

M: They called it... A civilization developed there, which was called Croatian... [laughing] a Croatian civilization?! *whatever.* They called this part Croatian...

N: And the rest [of the people] called them Slavs.

M: But who is they? [pause]. Hold on. [reading the ST]: **zajednicku krščansku civilizaciju koja se na ovim prostorima razvijala pod hrvatskim imenom, premda su papa i strani kronicari Hrvate do X. st. uglavnom nazivali „Slavenima"**. So the Pope and everybody else outside [the country] called them Slavs, and they called themselves Croats. That's what they wanted to say?

V: Yes. […] This is a stupid sentence in Croatian.

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M: Very stupid.

p)   M: But does that mean that the Croats waged a war and tried to capture those cities, or does it just mean that those guys just wouldn't let them in and so they couldn't settle down there, or what? I mean, the Croats didn't exactly wage wars when they came to this region. Or did they?

N [shakes her head]

M: I don't remember learning about it.

q)   M: But to me this sentence...

S [typing]: Go ahead.

M [reading the ST]: **Hrvati vjerojatno sve do X. st. nisu uspjeli prodrijeti u primorske gradove Kotor, Dubrovnik, Split, Trogir i Zadar, te na otoke Rab, Osor i Krk, koji su**... Oh, right, so until the 10th century those towns were in...

I: Under Byzantium.

M: Under Byzantium.

S [overlapping]: And the islands.

M: And after that the Croats entered them. Fine. Now it's clear to me.

r)   M: Maybe *fortifies*?

I: But no... **ona je samo ucvrstila svoj položaj** [it only fortified / strengthened its position]

M [overlapping]: **položaj**

S [overlapping]: *strengthened its position*

I: Yes. It's like *gained power*

S [overlapping]: *secured its position*, no, not *secured*...

I: Because it means that it was more powerful than Venice.

s)   S [overlapping]: *its position*... I think it's *ON the Adriatic*

M: I'd also say it's *on*

S: Because what is meant is the coast... the coastal part.

[…]

S: I think it's enough to use it without *coast* because it refers to the region...

[…]

M: Because they mean the Adriatic coast, probably

S: Yes.

M: I doubt they mean the sea.

S: No, no.

t)   I: Because he means Croatian... […] and not... Because in 1102, we had *Pacta Conventa*, the Union with Hungary... […] In 1102, Croatia enters the personal union with Hungary […] ...its kings being crowned with a separate Croatian crown... *whatever*.

[…]

S: Well, yes. In the sense of *domestic*, *as opposed to foreign rulers*, those who ruled over us.

I [overlapping]: Hungarians and later...

S [typing]: That's it. You're right. I also think so.

I: And that's *until 1102*.

u)	I: How about we say "*HIS beloved son Tomislav*"?
	S: Was he the Pope's son?
	I: No, but he would probably say "*my beloved son*".
	M: It says [in the ST] **ljubljenom sinu** [beloved son]
	I: **svome ljubljenom sinu** [to his beloved son]
	S: I don't know if he was his son...
	I: He wasn't...
	M: No, he wasn't. But if he *addresses him...*
	S: Like, my son...
	M: ...then it's *to MY beloved son*
	S: Right, right, *to his*, then.

4.9.2 Verbalizations related to resources

This category comprises verbalizations in which the subjects comment on different external resources and tools, whether printed or electronic.

Examples from L1 translation:

a)	M: This "Bujas" [bilingual dictionary] can really be stupid sometimes.
b)	M: Yes, because I wonder if this site is...
	I: Reliable.
	M: Reliable.
	I: *Vjesnik* [Croatian daily] is relatively... […] Because, I mean, nobody is perfect but *Vjesnik* is at least trying to be relatively...
	M: Yes.
	I: If they left it in English, it's probably a sign that it is [so]
c)	M: Have a look in "Oxford" [Advanced Learners' Dictionary], it always has the shortest and the simplest [explanations].
d)	N: That's big help.
	V: We know all that.
e)	V [reading from "Bujas"]: *intermittent*: **na mahove, isprekidan**. Humph. *Thank you*!
f)	M: How I love Google!

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g)	M: That [web page] is not in any way helping us translate it.

Examples from L2 translation:

h)	M: Are you sure we can trust this [site]? [laugh]
i)	M: This page is great. Yes!! This page is... I love this page!
j)	V [looking in the "Collocations" dictionary]: Wow, there's loads of stuff here.
k)	V [looking in the small "Guide to Belgium"]: These people here are not very generous with years [laughs]
l)	S: I hate the spell checker. It's always underlining what it shouldn't be underlining.
m)	I: Google finds it when there is nothing there
n)	S: Yes, that's why we love it.
o)	M [looking in "Bujas"]: I can never find what I'm looking for.
p)	S: I said, no way was it going to be in this [in 'Leksikon']. Ah, well. Because it's a general encyclopedia and I thought, yeah, right.
q)	M [looking in "OALD"]: I can't believe that the Oxford [dictionary] doesn't have it.
r)	S: What does it [the Spell Checker] know about Croatian cities, come on.

4.9.3   Verbalizations related to problems

This is a category of verbalizations in which the subjects identify translation problems. Examples:

a)	S: This *storytelling*, what are we going to say?
b)	N: What is *substructure*?
c)	I: Errr... What is the name of it?
d)	N: Is it uppercase or lowercase?
e)	N: Is it *intense* or *intensive*?
f)	M: I don't know how to put it together
g)	N: And how do you spell it?
h)	M: Do I need *THE foreign*...?

4.9.4   Verbalizations related to the ST

The verbalizations in this group relate to the source text as such.

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Examples from L1 translation:

a)	M: I don't like this text, at all.
	I: He-he. I know. Let's move on.

Examples from L2 translation:

b)	S [looking at the ST]: I "love" history!
	M [looking at the ST]: I adore it.
	I [looking at the ST]: Well, it's not that horrible. Wikipedia...
	S: This sounds like [a text] from a history text book from 4th grade of primary school. That's what it reminds me of.
	I: I think that's what it is.
	M: It must have been taken from there.
	S: [It gives] the facts.
c)	M: These [ST] sentences are so strange, all of them. Aren't they?
	S: Um-hm. Yes, they are.
d)	I: The things the Croatian language has to put up with [in badly-written texts].
e)	N: This is a difficult text. Isn't it?
	V: Yes, it is.
f)	M: This was written by a Croat! [laugh]

4.9.5 *Verbalizations related to the task at hand and group performance*

In this category of verbalizations, the subjects comment on the translation task and monitor their group performance.

Examples from L1 translation:

a)	S [looking at the brief]: This scares me.
b)	S: Oh, we're already here. *Cool*.
c)	S [typing]: Good for us!
	I: *Go us*!
d)	I: We got this sentence right straight away, wow!
e)	S: Man, so much time for a single word. It's taking us longer than it did for the whole translation.
f)	N: All this work for such a short text...
	V: We're doing rather well, actually...
g)	M: And we've finished this page. Still to go... Great, only one more sentence!
	N [overlapping]: Only two more sentences.
	M: Um, two sentences. Great!

h)	M [overlapping]: This is becoming...
	N [overlapping]: We're so stuck on this.

i)	V: I didn't think it would take us that much [time]. When we started I thought...

j)	V [looking at the TT on the screen; laughing]: We've got three *slashes* right at the beginning.
	M: But later we have fewer and fewer.
	V: Yes, it's good, it's good.

k)	N: Yes. Do we now have everything sorted out?
	V: Yes. There. We're done!
	N: Finally.
	V: It's like that when you want to check everything.
	N: And then some people say it's easy to translate. Anyone can do it!
	V: Yeah, right.

l)	S: Finished already?
	I: Yes.
	S: Is that possible? We're fast. Faster than last time.
	I: From 10.30 until a quarter to 12.
	S [overlapping]: We have the title, we have everything.

m)	S: It's good. The last one was a bit better, but it was probably easier, that text was, wasn't it?
	M: Well, it's easier [to work] into English.

Examples from L2 translation:

n)	I [having read the ST]: Are we happy?
	M: We're not happy. Not at all.

o)	S: Oh, we're already here.

p)	I: *And we're down to... one sentence. It's a three-line sentence, but it's one sentence.*

q)	V: Do we have a lot to rework?
	M: No, not at all. We have a lot less than when we were translating into Croatian.
	N: Is that right?
	V: Yeah, all those forests and paths... Trackless and all that. [laughs].

r)	M: We have only... I think we have only two underlined parts. Maybe three.
	V: What time is it? [glance at the clock]. We're doing well.
	M: We're good. We're doing better [translating] into English! [laughs]

s)	V [glancing at the clock]: This [text] is longer, I think it's longer, and we have finished.
	M: We have finished before we did with the other one.
	V: When did we begin?
	M: At eleven.

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V: At eleven.

M: And last time we took more than...

V: And it seems to me that this text is longer. I know that last time we got stuck on those paths and...

V: Last time we thought, oh, this is great, we have finished, but when we started revising it, then it was ooops!

M: This one we were able to check faster. We were able to check everything at once.

4.9.6 Verbalizations related to actions / interactions

This category comprises verbalizations in which the subjects plan their actions/interactions. These verbalizations signal strategic – as opposed to routine or automatic – behavior, as the examples below will show.

4.9.6.1 Related to reading ST

a)	M: Shall we read it first?
	V: Yes, we might as well. To see...
b)	S: And? Comma, right? Let's see what comes next.
c)	S: Let's scan through the text again to see what [tense] we'll use.

4.9.6.2 Related to reading TT

a)	M: Why don't you read the sentence?
b)	M [reading the TT]: Ok, *the common Christian...* I'm trying to read the whole sentence so that we'd get inspiration.
c)	I: Why don't you read it once more?
d)	M: Let's read the whole sentence now.
e)	I: Ok, let's start from the beginning now.
	S: Um-hm.
	I: You read and we'll follow
	M: Wait, shall we [revise] one sentence at the time...? If someone thinks something is not right...
	S: She should holler.
f)	S [overlapping]: We haven't read the whole text through paying attention to the *tenses*. To see if we got them wrong anywhere. You know.
	I: All right. I'll read it now.
g)	M: Listen to this, N. **Kraljevi su u njima**...
	V [interrupting]: Shall we move [the screen] so that she can also [see it]?
	N: No, I'm fine...

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M: We need someone unbiased to hear it [laughter]

V: All right, fine

N: It's better if I don't see it.

4.9.6.3 Related to resource consultations

a) S: Then let's *toss a coin*.

M: I can look it up in "Bujas".

S: Now we'll go on the internet...

I: You don't have to do it now. We'll do it later.

b) M: Let's first find on the Internet what we have to, which is *the Book of Kells*...

S: Should I go to Wikipedia or...?

I: Go to Google first and type in *Book of Kells* and then **knjiga**

c) S: Now we'll go to the other...

I: Go to that [website] Geografija and see if there is a translation. If there isn't, I wouldn't bother any more.

d) M: Good. [taking "Bujas"] I'll look up **tadašnji** while you're typing.

e) M: Save it and we're going back to the beginning and we're going to look for **Akvileja**.

f) M: Look up under Christianity and see what it says there.

g) N: We could look up St. Patrick, for example.

h) M [pointing at „Bujas"]: Why don't you look up **provincial**, maybe it will give us an idea for that word.

i) M: *plunder* is like **pljackati**... But have a look, maybe it ['Bujas'] has a good word. I prefer to look it up when it comes to words like that, and sometimes it gives you a good one...

V: It gives you an idea.

j) M: While you two are looking for that, I'll search the Internet for this *Book of Kells*.

k) M: Yes... Let's look up *teach* for ideas.

l) V: Why don't you read the examples [from "OALD"].

m) V: Let's wait until she [N.] has looked up **obilježje**, and then we'll have a look in the Collocations [Dictionary].

n) M: Why don't we just turn on the spell checker and let it do the job instead of having to look for...

4.9.6.4 Related to postponement of final decisions

a) M: Let's write the sentence like that for now, and then underline it or something and then later we can come back to it. How about that?

b) I: ...write this down and then modify it later, so that we have a basic skeleton.

c) M: I think it might be better to leave the title for the last.

d)	S: Let's leave that word and move on or else we'll be here five hours. Let's put the sentence together and leave that.
e)	I [puts the "Monograph" aside]: Yes, let's do this and we'll fool around with that at the end.
f)	M: It's underlined... V: Ok. M: ... and that's it, when we return we'll... V: Then see [how it fits in] with the rest of the text.
g)	M [typing]: Let's put a slash and finish the sentence and then we'll see what we'll [do].

4.9.6.5 Related to writing TT

a)	M: Come on, write, write!
b)	M: Now write it down before we forget!
c)	V: It's all right. You just write down what comes to your mind.
d)	N [overlapping]: Maybe we don't need *which was*. M: Let's see what it looks like [types]

4.9.7 Verbalizations related to self

Some of the subjects' verbalizations in our collaborative translation protocols were related to self, as the following examples illustrate:

Examples from L1 translation:

a)	M: My concentration...
b)	I: I'm not very good with names…
c)	S [typing]: I have to admit I don't know that much about history so I don't know...
d)	S: Aha. I never know that. I: I go by the ear.

Examples from L2 translation:

a)	S [looking at the ST]: How can you read so fast, I don't get it. I: Years of training. M [looking at the ST]: When I read so fast, I don't memorize anything.
b)	S [typing]: I never know how to spell *independent*. With an a or e? M: I don't know how to spell the simplest words. The worst thing is when I spell exotic with a g. S & I [laugh]
c)	S: What's wrong with my spelling today?

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d)	S [overlapping]: Always, I always do that. I've misspelled that word in thousands of tests.

e)	S: *I'm brain-dead today, for the record.* I: It's OK. Me, too.

f)	S: Here, have a look. I hate it when there are a hundred [words given]. I can't decide.

g)	S: Word order. That's always bugging me.

4.9.8   Interpersonal, task-related

Verbalizations from this category are aimed at maintaining interpersonal relations and positive working atmosphere. Jokes, which have already been discussed (see 4.8.7), play an important part in collaborative translation protocols of all four groups. Here are some additional examples of interpersonal, task-related verbalizations:

a)	M [joking]: Don't spread the bad temper, please, or...

b)	I [smiling]: *I don't have anything against you, or your long sentences* S [laughing]: *All right! You're forgiven*!

c)	V: Would you like me to type? So you can... M: Would you, for a while? Go ahead [gets up] V: I mean, if you... M: I don't mind doing it V: ... so you can rest for a while. N: I'm not used to it [the notebook], so... V: No, it's fine. M: Maybe your brain will start functioning in a different way... V: You'll get some rest. M: ...when you see it [the TT] in front of you. [they swap seats]

d)	M: If you two don't like it, you can change it...

4.9.9   Verbalizations that are not directly task-related

Some of the verbalizations were not directly related to the task at hand. Depending on how well the subjects know each other outside the educational setting, they engaged in conversation on other subjects to varying degrees, such as the following two exchanges, both from Group C, illustrate.

a)	S: I., off the record, do you have *Nightmare before Christmas* on DVD? I: I have a DivX [version].

S: All right. You'll lend it to me.

I: *Of course, of course.*

b)	M: Does anyone want any fruit juice?
	I: Ok.
	S: *No, thanks.*
	M [to I]: You want apple juice?
	I: Um-hm.
	S: You're an apple girl
	M [gets her and I. some juice]
	S, I, M [chat about a club they go to, whose name translates as Apple]
	I [looking at the ST]: Let's get back to work.

In this chapter we have presented the products of our conceptual ordering with relevant examples. The next three chapters report on the main findings based on the data from the collaborative translation protocols, the pre- and post-translation questionnaires, and the control experiments.

5   Findings from the collaborative translation protocols: Presentation and discussion

5.1   Translation problems

The notion of "problem" has been defined in section 4.4, together with our classification of problems. In this section we will:

- present the findings regarding the overall *number* of problems each group encountered in the collaborative translation sessions in each direction of translation;

- present the findings regarding the *type* of problems encountered;

- discuss the findings.

Table 5 – Number and type of problems

GROUP A		GROUP B		GROUP C		GROUP D	
L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*

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p	113	122	130	125	115	116	108	112
O	14 (12.39%)	9 (7.38%)	3 (2.31%)	11 (8.8%)	17 (14.78%)	25 (21.55%)	3 (2.78%)	10 (8.93%)
M	1 (0.88%)	0 (0%)	2 (1.54%)	0 (0%)	2 (1.74%)	1 (0.86%)	5 (4.63%)	1 (0.89%)
L	49 (43.36%)	65 (53.28%)	60 (46.15%)	61 (48.8%)	50 (43.48%)	50 (43.1%)	57 (52.78%)	57 (50.89%)
S	35 (30.97%)	42 (34.43%)	49 (37.69%)	40 (32%)	39 (33.91%)	33 (28.45%)	39 (36.11%)	28 (25%)
T	13 (11.5%)	4 (3.28%)	12 (9.23%)	6 (4.8%)	6 (5.22%)	5 (4.31%)	3 (2.78%)	11 (9.82%)
r	1 (0.88%)	2 (1.64%)	4 (3.08%)	7 (5.6%)	1 (0.87%)	2 (1.72%)	1 (0.93%)	5 (4.46%)

In Table 5, the columns show the number of problems for each group, A, B, C and D, in each direction (L1 translation and L2 translation). Figures in the row marked "P" show the total number of problems for each group and direction, while the remaining rows show a breakup into types of problems. "O" stands for orthographical problems, "M" for morphological, "L" for lexical, "S" for syntactical, "T" for textual and "r" stands for all the remaining problems. The numbers in brackets show the percentage of a given type of problem relative to the total number of problems for each group and direction.

5.1.1   L1 translation problems – inter-group comparison

An inter-group comparison of problems in L1 translation shows that Group B was the one with the largest number of problems (130) in this direction of translation. The remaining three groups encountered between 108 (Group D) and 115 (Group C) problems. As far as the types of problems are concerned, there is a high degree of coincidence among the groups. All four groups show the highest values in the category of lexical problems (ranging between around 43% and 53% of all problems encountered). Syntactical problems also featured high on the agenda for all four groups, accounting for between 31% and 38% of all problems. The percentage of orthographical problems is where the group values vary the most: for Groups A and C orthographical problems accounted for 12% and 15% respectively, compared to 2% and 3% in Groups B and D. Groups A and B were more concerned with textual problems (12% and 9% respectively) than were groups C and D (5% and 3% respectively). Morphological concerns were last on the agenda for all four groups, with Group D displaying slightly

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higher values than the remaining three groups (5% compared to 1-2%). Figure 7 shows all this on a chart, while the exact numbers can be found in Table 5.

L1 translation problems: inter-group comparison
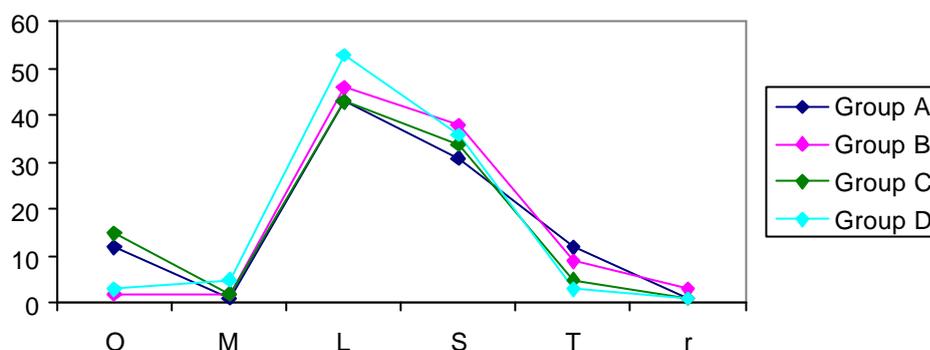
Figure 7 – L1 translation problems: inter-group comparison

5.1.2 *L2 translation problems – inter-group comparison*

In L2 translation there is again a high degree of coincidence among the groups. They encountered between 112 (Group D) and 125 problems (Group B) in this direction of translation. The highest values can again be found in the category of lexical problems, between 43% (Group C) and 53% (Group A) of all problems. Syntactical problems come next, ranging between 25% (Group D) and 34% (Group A). Group C displays a higher value for orthographical problems (22%) than the other groups, whose values in this category range between 7-9%. Group D was more concerned with textual problems (10%) than the remaining three groups (3-5%). Values in the category of morphological problems were very low for all groups (under 1%). Figure 8 shows these findings on a chart. Exact numbers are in Table 5.

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L2 translation problems: inter-group comparison
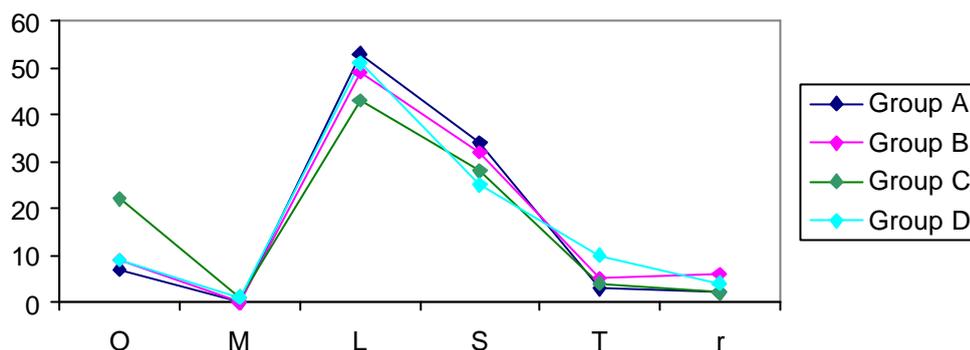
Figure 8 – L2 translation problems: inter-group comparison

5.1.3   Translation problems - L1 and L2 translation compared

To enable comparison in terms of number and type of problems between L1 and L2 translation, we have calculated average values for all four groups in each direction.

Table 6 – Translation problems – group averages compared

	Group average	
	L1	*L2*
P	116.5	**118.75**
O	8.06%	**11.66**%
M	**2.2**%	0.44%
L	46.44%	**49.02**%
S	**34.67**%	29.97%
T	**7.18**%	5.55%
r	1.44%	**3.36**%

As Table 6 shows, the average number of problems in both directions is very similar (117 in L1 translation vs. 119 in L2 translation). As far as the types of problems are concerned, the results also show remarkable similarities. In both directions, the percentages are highest in the category of lexical problems (46% and 49% in L1 and L2 translation respectively), followed by syntactical (34% and 30% respectively), orthographical (8% and 12% respectively), textual (7% and 6% respectively) and morphological problems (2% and under 1% respectively).

While L2 translation displays a slightly higher value in the category of lexical (a difference of under 3%) and orthographical problems (under 4%), L1 translation had 4% more syntactical problems than L2 translation, and a slightly higher value in the

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category of textual problems (under 2%). Morphological problems were also a bigger concern in L1 translation (a difference of under 2%). Higher values in each direction have been highlighted in Table 6, while Figure 9 shows comparison of problem types in the two directions on a chart.

Problem types: group averages compared in two directions
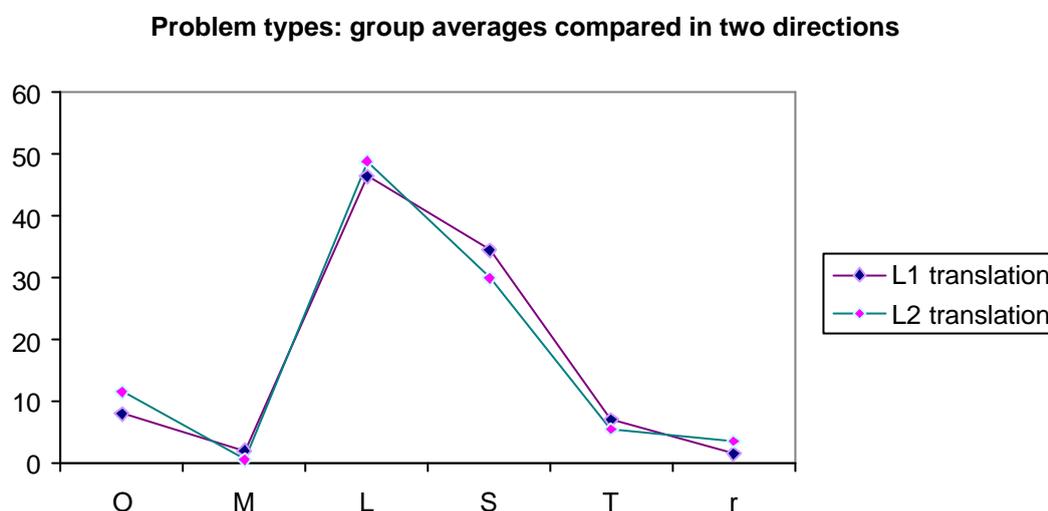
Figure 9 – Problem types: L1 and L2 translation compared

5.1.4 Discussion

The findings suggest that lexical problems account for almost half of all the problems encountered in both directions. The subjects' preoccupation with lexis – finding the right word or expression – is on average slightly more prominent in L2 translation. However, looking at individual findings for each group, we notice that for Group C there is almost no difference between the percentage of lexical problems in L1 (43.48%) and in L2 (43.1%), while in the case of Group D, the percentage of lexical problems is actually slightly higher in L1 translation (52.78%, compared to 50.89% in L2). Therefore, we could conclude that, when it comes to the proportion of lexical vs. non-lexical problems, as defined in this study, there is no consistent difference between L1 and L2 translation.

Our findings further show a higher proportion of syntactical problems in L1 translation compared to L2 translation. This is true of average group findings, as well as for the individual group findings, with the exception of Group A, which had a higher proportion of syntactical problems in L2 translation. A possible reason why the subjects seemed to be more preoccupied with syntax in L1 translation than in L2 translation

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could be the difference between the two target languages in question, Croatian and English respectively. Croatian has a very flexible syntactical structure due to its complex inflection system: suffixes, rather than word order, indicate relationships between sentence elements. (This fact may also explain the greater concern for morphology in translation into Croatian, which the findings from all the groups display.) Thus, considerable semantic and stylistic nuancing can be achieved in Croatian by altering the word order, and the subjects' verbalizations testify to this concern. English, on the other hand, has a rather fixed order of sentence elements, which does not present the user with too many options. Given their level of L2 competence, the subjects in this study were rarely insecure about the "correct" English word order. The syntactical problems they did verbalize concerned aspects of English syntax other than order of sentence elements (whether or not to use a comma; some decisions concerning tenses and articles that were classified as syntactical because they happened on the sentence level; problems arising from the difference between Croatian and English in terms of pre- vs. post-modification, and so on).

Orthographical problems were verbalized, perhaps unsurprisingly, more often in L2 translation. What might be surprising, however, is the relatively high value in this problem category even in L1 translation (for Group A, the value is actually a lot higher in L1 than in L2 translation). This shows that orthography in general, and capitalization in particular, is a concern in both directions, and not just in translating into a second language. Specificities of language pairs should be taken into consideration in this respect. Both English and Croatian, albeit for different reasons, involve orthographical challenges. Group C, which had the highest values of all groups in this category in both directions (15% in L1 translation and nearly 22% in L2 translation) may serve as an illustration. "Sanja," the subject who was in charge of typing the target text in this group, seems to have been very insecure about orthography in both directions and she often checked with the group before writing something down. Sanja's own verbalizations regarding her spelling confirm this (see 4.9.7). Interestingly, Sanja refused to turn on the spell checker when another group member suggested this, verbalizing her negative feelings towards the tool (see 4.9.2). This finding may be typical of the present situation in Croatia, where students and novices (and even some seasoned translators) are insufficiently at home with such basic translator aids as the spell checker. The questionnaires confirm that in the Croatian language orthography is a concern (6.2.2.1).

Textual problems were on average slightly more numerous in L1 translation, Group D being an exception in this respect. Greater awareness of textual level in L2 translation might help improve the overall quality of translation in this direction if we are to judge by the results of this latter group. The findings we have are, of course, insufficient in themselves to allow us to form any general conclusions in this respect.

5.2   Tentative solutions

The terms "tentative solution" (tS), "spontaneous solution" (spS), "solution from external resources" (xS) and "fluency quotient" have been defined and discussed in section 4.5. In this section we will:

- Present the findings on the total number of tentative solutions, and tentative solutions per problem, that were considered in each collaborative translation task;
- Present the findings on the total number of spontaneous solutions, and spontaneous solutions per problem;
- Present the findings on the proportion of spontaneous solutions vs. those from external resources;
- Compare groups and directions;
- Discuss the findings.

In Table 7, the columns show findings for all four groups, A, B, C and D, and for both directions of translation, L1 and L2. The first row gives the total number of problems encountered in the given translation task (for detailed findings on problems see 5.1). The second row presents the total number of tentative solutions considered in each task. In the third row, figures are given showing how many tentative solutions per problem each group considered in a given translation task. The next row provides the range of solutions, e.g. Group A considered at least one solution and at most 14 solutions for any problem in their L1 translation task. Row "1 tS" shows how many times (in the case of how many problems) only one solution was considered, "2 tS" how many times two solutions were considered, and so on.

Row marked "xS" presents the number of all solutions that were found in external resources and in brackets the proportion of external solutions relative to all the tentative solutions considered in each task. The row marked "xS/P" shows the number of solutions found in external resources per problem.

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In the row marked "spS", the total number of spontaneous solutions is given, followed by the values for spontaneous solutions per problem ("fluency quotient") in the next row. A range is given for spontaneous solutions similar to the one for all solutions explained above. Thus row "0 spS" indicates how many times no spontaneous solutions were found for a problem, "1 spS" how many times one spontaneous solution was considered, and so on.

Table 7 – Tentative solutions

	GROUP A		GROUP B		GROUP C		GROUP D	
	L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*
P	113	122	130	125	115	116	108	112
tS	352	303	428	318	297	284	349	285
tS/P	3.12 /P	2.48 /P	3.29 /P	2.54 /P	2.58 /P	2.45 /P	3.23 /P	2.54 /P
range tS	1-14	1-20	1-22	1-12	1-21	1-22	1-15	1-21
1 tS	14x	31x	19x	36x	25x	39x	11x	31x
2 tS	52x	55x	61x	57x	53x	57x	60x	54x
3 tS	20x	19x	19x	12x	19x	6x	9x	10x
4 tS	11x	7x	14x	6x	6x	5x	7x	5x
5 tS	6x	3x	2x	4x	3x	1x	7x	1x
>5 tS	10x	7x	15x	10x	9x	8x	13x	9x
xS	42 (11.93%)	33 (10.89%)	109 (25.47%)	93 (29.25%)	26 (8.75%)	79 (27.82%)	83 (23.78%)	79 (27.72%)
XS/P	0.37 /P	0.27 /P	0.84 /P	0.74 /P	0.23 /P	0.68 /P	0.77 /P	0.71 /P
spS	310 (88.07%)	270 (89.11%)	319 (74.53%)	225 (70.75%)	271 (91.25%)	205 (72.18%)	266 (76.22%)	206 (72.28%)
spS/P	**2.74** /P	**2.21** /P	**2.45** /P	**1.8** /P	**2.36** /P	**1.77** /P	**2.46** /P	**1.84** /P
range spS	1-11	1-7	0-16	0-6	0-19	0-5	0-13	0-7
0 spS	0x	0x	3x	9x	1x	3x	2x	3x
1 spS	18x	33x	23x	42x	24x	42x	13x	36x
2 spS	54x	56x	70x	53x	56x	55x	65x	55x
3 spS	17x	18x	16x	11x	18x	9x	11x	13x
4 spS	9x	9x	12x	7x	5x	4x	9x	2x
5 spS	6x	2x	2x	2x	3x	2x	6x	0
>5 spS	9x	4x	4x	1x	7x	0x	2x	2x

5.2.1   L1 translation – tentative solutions – inter-group comparison

The number of tentative solutions in L1 translation ranged between 2.58 (Group C) to 3.29 (Group B) per problem. The groups considered anything between one and 14 tentative solutions for any given problem, some of them as many as 22. Most typically two tentative solutions were considered for any given problem.

In all groups, the number of spontaneous solutions is much higher than the number of solutions found in external resources, i.e. the subjects of all groups relied largely on their own (and each other's) internal resources to produce tentative solutions.

Between 75% (Group B) and no less than 91% (Group C) of all tentative solutions were arrived at spontaneously (mean value: 82.52%). Between 9% and 25% of all tentative solutions were found in external resources (mean value: 17.48%).

For all four groups, the number of spontaneous solutions per problem ("fluency quotient") was similar, ranging between 2.36 (Group C) and 2.74 (Group A) per problem.

The groups considered as many as 19 spontaneous solutions for a given problem. The number of problems for which the subjects did not come up with a single spontaneous solution was very small indeed, ranging from 0 (group A) to 3 (group B). Details of the distribution are shown on a graph in Figure 10.

The findings further indicate that, while all the groups relied largely on their internal resources to produce tentative solutions, some of them – in particular groups B and D – complemented their internal resources with external ones to expand the number of their tentative solutions. In other words, while the "fluency quotient" is similar for all groups, some groups made *additional* use of external resources to a larger extent than the others. In section 5.4 we discuss the groups' use of external resources in more detail, and examine to which extent and in what way the external resources contributed to the subjects' final translation decisions. This issue is also related to group profiles, which will be discussed in section 5.6.

5.2.2   *L2 translation – tentative solutions – inter-group comparison*

In L2 translation, the total number of tentative solutions is very similar for all groups, ranging between 2.45 and 2.54 per problem. The groups mostly considered between one and around 20 solutions per problem, Group B displaying the narrowest range (1-12). Typically, two tentative solutions per problem were considered.

The vast majority of tentative solutions came from internal resources, between 71% (Group B) and 89% (Group A) (mean value: 76.08%). Between 11% and 29% of all tentative solutions were found in external resources (mean value: 23.92%).

"Fluency quotient," or the number of spontaneous solutions per problem, was very similar for groups B, C, and D (1.8, 1.77, and 1.84 respectively), with Group A displaying the highest quotient of 2.21 spontaneous solutions per problem.

The groups considered seven spontaneous solutions at the most for a given problem. Group A never failed to have at least one spontaneous solution to a problem,

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while Group B was short of spontaneous solutions in connection with nine problems. Details of the distribution are shown on a graph in Figure 10.

The findings suggest that all groups, in particular Group A, relied mainly on their internal resources to produce tentative solutions. Groups B, C, and D made additional use of external resources to a greater extent than did Group A, who found only 11% of their tentative solutions in external resources (compared to 28-29% in other groups).

Distribution of spontaneous solutions per problem: L1 and L2 compared
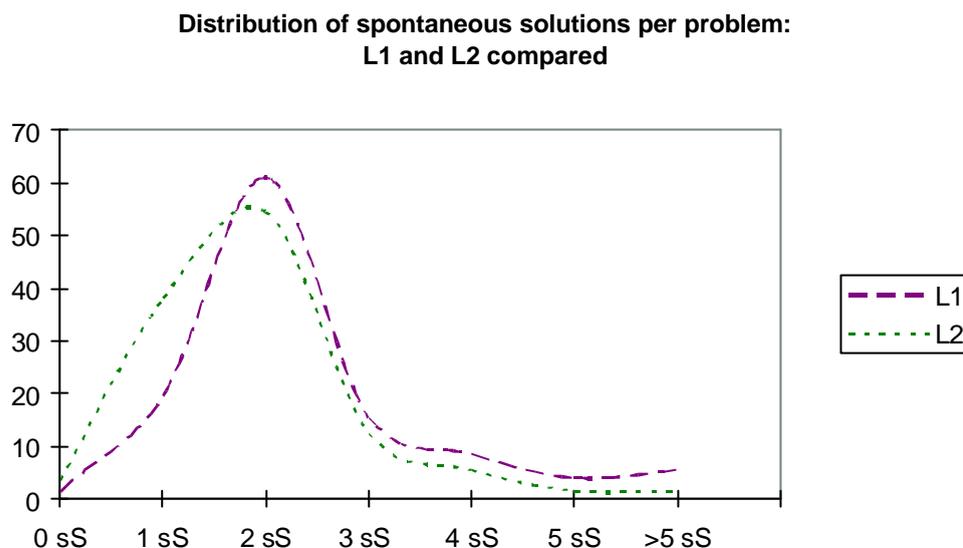
Figure 10 – Distribution of spontaneous solutions per problem in the two directions of translation

5.2.3 Tentative solutions – L1 and L2 compared

The total number of tentative solutions is higher in L1 translation than it is in L2 translation for all four groups (mean values: 356.5 tentative solutions in L1 translation, compared to 297.5 in L2 translation). The difference in the two directions is even more prominent when spontaneous solutions are compared. The fluency quotient is higher in L1 translation for all four groups, as Table 8 shows. A T-test was used, and since the p-value is below 0.05 (p = 0.00017), the difference in the fluency quotients in the two directions can be said to be statistically significant.

Table 8 – Fluency quotient in L1 and L2 translation compared

	Group A	Group B	Group C	Group D	mean

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L1	2.74	2.45	2.36	2.46	2.5
L2	2.21	1.8	1.77	1.84	1.9

The number of problems in connection with which groups failed to come up with a single spontaneous solution was larger in L2 translation. Group A never encountered this situation in either direction, while the other three groups encountered it more frequently in L2 translation (an average value of 3.75 compared to 1.5 in L1 translation).

The number of solutions found in external resources per problem is slightly higher in L1 translation, with the exception of Group C. Group A's reliance on external resources was relatively low in both directions, especially in comparison with Groups B and D (see section 5.4, where we deal with the use of resources in more detail).

When we compare the proportion of spontaneous solutions vs. solutions from external resources, we see that for three of the groups (B, C, and D), the proportion of spontaneous solutions in the total number of tentative solutions is higher in L1 translation. Table 9 compares the mean values in the two directions of translation.

Table 9 – Spontaneous vs. external solutions

	Spontaneous	**From external resources**
L1	291.5	65
L2	226.5	71

5.2.4 Discussion

The most prominent difference in the data for the two directions of translation when it comes to tentative solutions seems to be in the "fluency quotient". All groups were able to produce more spontaneous solutions per problem when working into their L1, which would indicate higher "fluency" in this direction, and hence stronger reliance on internal resources for generating translation solutions.

Having more options to choose from for translation problems may prove to be related to overall quality of translation. In order to substantiate this claim, we need to

examine more closely the other findings from our collaborative translation protocols, which will be done in the sections that follow.

5.3 Selected solutions

The terms "selected solution" and "optimization quotient" have been defined and discussed in section 4.5.3. In this section we will:

- Present the findings regarding the "origin" of selected solutions, i.e. the number of cases in which the selected solution was chosen from among the spontaneous solutions, compared to the number of cases it was chosen from among the solutions found in external resources;
- In the case of the spontaneous solutions chosen as selected solutions, examine whether they were "purely spontaneous" (produced with no help from external resources), based on ideas from external resources, or proposed spontaneously but confirmed in an external resource;
- Present the findings on optimization quotients for each group and direction;
- Compare groups and directions;
- Discuss the findings.

Table 10 – Selected solutions

	GROUP A		GROUP B		GROUP C		GROUP D	
	L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*
P	113	122	130	125	115	116	108	112
xS→seS	5x (4.42%)	4x (3.28%)	10x (7.69%)	20x (16%)	4x (3.48%)	12x (10.34%)	7x (6.48%)	12x (10.71%)
spS→seS (total)	108x (95.58%)	118x (96.72%)	120x (92.31%)	105x (84%)	111x (96.52%)	104x (89.66%)	101x (93.52%)	100x (89.29%)
purely spS	99x (87.61%)	108x (88.52%)	100x (76.92%)	89x (71.2%)	103x (89.57%)	90x (77.59%)	85x (78.7%)	72x (64.29%)
xR→spS	1x (0.88%)	2x (1.64%)	2x (1.54%)	1x (0.8%)	5x (4.35%)	0x (0%)	6x (5.56%)	3x (2.68%)
spS+xR	8x (7.08%)	8x (6.56%)	18x (13.85%)	15x (12%)	3x (2.61%)	14x (12.07%)	10x (9.26%)	25x (22.32%)
Range	1-13	1-12	1-21	1-8	1-21	1-10	1-14	1-20
1st	51x	59x	59x	65x	43x	65x	43x	57x
2nd	36x	42x	44x	39x	44x	40x	40x	39x
3rd	13x	11x	9x	9x	15x	3x	10x	10x
4th	6x	4x	9x	4x	4x	5x	5x	2x
5th <	7x	6x	9x	8x	9x	3x	10x	4x
O.Q.	**1.96**	**1.82**	**1.96**	**1.81**	**2.06**	**1.63**	**2.06**	**1.72**

The columns in Table 10 present the findings for all four groups and both directions of translation. The first row, marked "P" gives the total number of problems encountered by each group for a given task. The row marked "xS→seS" shows in how many cases (in connection with how many problems) the solution that was chosen to be the selected solution had been found in external resources. The next row ("spS→seS"), on the other hand, shows the total number of instances when selected solutions were chosen from among the spontaneous solutions. The latter figure has been further broken up to show the number of cases when the selected solution was chosen from among the spontaneous solutions arrived at without the help of external resources ("purely spS"). "xR→spS" stands for spontaneous solutions produced after consulting an external resource, which does not mean that the solution was actually found in an external resource, but only that consulting an external resource might have provided the "inspiration" needed to arrive at the solution spontaneously. "spS+xR" stands for those solutions that were arrived at spontaneously but afterwards confirmed in an external resource and adopted as the selected solution.

The next part of Table 10 looks at which solution, "in order of appearance," was chosen to be the selected solution. While the total number of tentative solutions considered was the subject of section 5.2, here we are looking at the solutions that were actually selected. For example, the subjects might have considered five tentative solutions and decided to adopt the last, or fifth, solution as their selected solution. Or, in another case, they might have considered ten or twenty different tentative solutions, but in the end decided to go back to the first one and select that. We counted the number of instances when the first, the second, the third, and so on, tentative solution was chosen to be the selected solution (see rows marked "1st", "2nd", "3rd" etc.), and calculated the mean value of this. We are calling this value "optimization quotient" (see section 4.5.3.2).

5.3.1 L1 translation – selected solutions – inter-group comparison

In L1 translation, protocols of all groups show that selected solutions came from internal resources far more often than they did from external ones: only in 3.48% (Group C) to 7.69% (Group B) of the cases, or in connection with only between four and ten of all problems encountered, were the selected solutions found in external resources. Groups B and D seem to have relied on external resources for their selected

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solutions slightly more often (in 7.69% and 6.48% of the cases respectively) than Groups A and C (who did so in 4.42% and 3.48% of the cases respectively).

In other words, the groups relied on internal resources for their selected solutions in the vast majority of the cases (92.31% to 96.52%). In all the groups, the "purely" spontaneous solutions, i.e. those arrived at without the help of external resources, were chosen far more often than other types of spontaneous solutions (those arrived at after consultations with external resources or those confirmed in external resources). Groups A and C chose their selected solutions from among the "purely" spontaneous solutions more often than did the remaining two groups. Groups C and D seemed to have used the external resources for explanations and "inspiration" more often than did the other two groups. Groups A, D and especially B seemed to rely on external resources for confirmation of their spontaneous solutions in deciding on their selected solutions more often than did group C. Group B thus found confirmation in an external resource in 13.85% of all selected solutions, compared with Group C's 2.61%.

As far as "optimization quotient" is concerned, Groups C and D display a slightly higher value (2.06 in both groups) compared to Groups A and B (1.96 in both groups). This means that the former two groups on average opted for "later" solutions than did the latter two groups.

5.3.2   L2 translation – selected solutions – inter-group comparison

In L2 translation, all groups chose their selected solutions from among the spontaneous solutions in a vast majority of the cases: from 84% (Group B) to 96.72% (Group A). Group A decided to settle for a solution found in an external resource in connection with only four (of 122) problems. This group's score for "purely spontaneous" solutions is the highest: 88.52% of their selected solutions fall into this category, compared to Group B, C and D's scores (71.2%, 77.59% and 64.29% respectively). Group D seems to have used external resources for "ideas" slightly more often than the remaining groups (2.68% compared to between 0% and 1.64%). The same group's selected solutions were also most frequently confirmed in external resources, in 22.32% of the cases, compared to Group A's 6.56%. The remaining two groups confirmed their selected solutions in around 12% of the cases.

"Optimization quotient" was slightly higher for Groups A and B (1.82 and 1.81 respectively, compared to 1.63 and 1.72 in Groups C and D respectively). This shows

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that the former two groups on the whole opted for slightly "later" solutions than did groups C and D.

5.3.3   Selected solutions – L1 and L2 translation compared

Spontaneous solutions, rather than those found in external resources, were chosen as selected solutions in a vast majority of the cases in both directions. This was true more often in L1 translation (on average 94.48% of all selected solutions were spontaneously arrived at in this direction of translation, compared with 89.92% in L2 translation; see Table 11). Group A was, however, an exception to the group average score, having opted for spontaneous solutions for their selected solutions slightly more often in L2 translation than they did in the other direction (96.72% of the cases, compared to 95.58%).

Table 11 – Origin of selected solutions

	xS	purely sS	xR→ sS	sS+xR
L1	5.52	83.2	3.08	8.2
L2	10.08	75.4	1.28	13.24

Purely spontaneous solutions accounted for more selected solutions in L1 translation (83.2%) than they did in L2 translation (75.4%). Group A was again an exception in this respect, scoring slightly higher in purely spontaneous solutions in L2 (88.52% vs. 87.61% in L1).

In L2 translation, As Table 11 further shows, the groups on average chose their selected solutions from among those confirmed in external resources more often than they did in L1 translation: 13.24% of all selected solutions were confirmed in external resources in L2 translation, compared to 8.2% in L1 translation. Looking at individual findings, however, we see that this was in fact the case only of two groups, C and D, while Groups A and B in fact selected "confirmed" solutions relatively more often in L1 (see row marked "spS+xR" in Table 10).

As far as "optimization quotient" is concerned, there is a higher degree of coincidence among the groups, in that for all the four groups without exception this value was higher in L1 translation than in the other direction (see Table 12). This

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suggests that the groups tended to choose their selected solutions from among the "later" solutions in L1 translation than they did when translating into their L2.

The optimization quotient is higher in L1 translation for all four groups, as Table 12 shows. A T-test was used, and since the p-value is below 0.05 (p = 0.03438), the difference in the optimization quotients in the two directions can be said to be statistically significant.

Table 12 – Optimization quotient

	Group A	Group B	Group C	Group D	mean
L1	1.96	1.96	2.06	2.06	2.01
L2	1.82	1.81	1.63	1.72	1.75

5.3.4   Discussion

The "purely spontaneous" decisions were by far the most frequent kind of final decision for all groups and in both directions, emphasizing the role of internal resources in translation processes regardless of direction.

Spontaneous solutions confirmed in external resources were on average selected more frequently in L2 translation than in the other direction. In both directions, more prominently in L2 translation, spontaneous solutions confirmed in external resources were on average chosen as selected solutions more often than those solutions *found* in external resources. This trend is more prominent in L2 translation, suggesting that the role of external resources in output *monitoring* might be more important in this direction than in L1 translation. The role of external resources in making final decisions is in L2 translation more related to confirming the solutions than it is to finding solutions and "getting ideas", while in L1 the roles are more evenly distributed (see Table 11). In L2 translation, the subjects might have been slightly more in need of external resources for confirmation of particular solutions before making their final decisions. However, group findings are inconsistent in this respect, which means more research is necessary before conclusions are formulated.

The finding that all groups on average chose slightly "later" solutions L1 translation correlates with the finding that in this direction there were more tentative

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solutions to choose from in the first place (see 5.2). It also correlates with the finding that in this direction both groups spent more time discussing the tentative solutions (see 5.7). It seems that in L1 translation, groups produced more spontaneous solutions and spent more time on their monitoring, while in the other direction they spent more time consulting external resources – either to find ideas or tentative solutions, or to confirm those solutions arrived at spontaneously. It could be argued that this quotient in higher when translating into L1 because higher internal criteria or "aspiration level" (cf. Byron 1998) are set for the final product. In other words, the subjects were more critical of their tentative solutions when translating into L1, which was why they continued their search until settling for a solution that met their "target text vision". It is clear that other factors, such as motivation, (the absence of) time restriction, and so on, also play a part when it comes to optimization.

5.4 External resources

External resources have been defined and classified in section 4.6.2. In this section we will:

- Present the comparative findings on the number of problems in connection with which external resources were consulted;

- Present the findings on the total number of consultations per task, comparing groups and directions;

- Present the findings on the use of particular type of external resource by each group and in each direction;

- Relate the total number of consultations to how often they resulted in finding the selected solution, or helped arrive at the selected solution – how "useful" or "helpful" a particular resource was.

In Table 13, the columns show findings for all four groups, A, B, C and D, and for both directions of translation. The first row gives the total number of problems encountered in the given translation task. The second row presents the figures related to the number of problems in connection with which external resources were consulted. In the next row, the total number of consultations is given. The two different figures in the second and third rows reflect the fact that the groups sometimes made several

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consultations in connection with the same problem, particularly when a problem proved difficult to solve, or when the resources consulted were unhelpful.

The eight rows that follow give the breakup in the number of consultations according to the type of resource. "P-" stands for a printed, and "E-" for an electronic resource.

The next section of the table provides information on how many times an external resource consultation resulted in finding a solution that was actually adopted as the selected solution. The figure in brackets refers to those additional cases when the external resource helped in the decision making by "inspiring" or "confirming" a spontaneously produced solution that ended up being adopted as the selected solution.

Table 13 – Use of external resources

	GROUP A		GROUP B		GROUP C		GROUP D	
	L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*
Problems	113	122	130	125	115	116	108	112
Re. how many problems	23 (20.35%)	19 (15.57%)	42 (32.31%)	46 (36.8%)	15 (13.04%)	32 (27.59%)	35 (32.41%)	46 (41.07%)
Total number of consultations	31	30	80	74	32	66	70	128
P-bilingual dict.	17 (55%)	11 (37%)	32 (40%)	27 (36%)	7 (22%)	13 (20%)	27 (39%)	28 (22%)
P-monolingual dict.	0	6 (20%)	7 (9%)	6 (8%)	3 (9%)	9 (14%)	8 (11%)	21 (16%)
P-collocations dict.	0	4 (13%)	0	7 (9%)	1 (3%)	12 (18%)	2 (3%)	11 (9%)
P-encyclopedia	4 (13%)	2 (7%)	5 (6%)	4 (5%)	3 (9%)	4 (6%)	11 (16%)	4 (3%)
P-parallel text	5 (16%)	1 (3%)	1 (1%)	0	2 (6%)	1 (2%)	2 (3%)	21 (16%)
P- spelling manual E-spell checker	0	0	7 (9%)	0	2 (6%)	4 (6%)	3 (4%)	5 (4%)
E-Google	5 (16%)	6 (20%)	28 (35%)	27 (36%)	13 (41%)	16 (24%)	9 (13%)	12 (9%)
E-Wikipedia/ Encarta	0	0	0	3 (4%)	1 (3%)	7 (11%)	8 (11%)	26 (20%)
How many times selected / 'helpful'	5 (+8 'helpful')	4 (+9 'helpful')	10 (+18 'helpful')	18 (+18 'helpful')	4 (+4 'helpful')	12 (+17 'helpful')	7 (+10 'helpful')	12 (+35 'helpful')
P-bilingual dict.	5 (+3)	3 (+1)	7 (+13)	13 (+5)	1 (+1)	3 (+3)	7 (+2)	4 (+4)
P-monolingual dict.	0	0 (+1)	0	1 (+1)	0 (+1)	1 (+4)	0	0 (+9)
P-collocations dict.	0	0 (+1)	0	0 (+1)	0	2 (+4)	0	3 (+2)
P-encyclopedia	0	0 (+1)	0	1 (+0)	0	1 (+1)	0 (+3)	3
P-parallel text	0 (+4)	0	0	0	0 (+1)	0 (+1)	0	2 (+7)
P-spelling manual	0	0	0 (+2)	0	1	1 (+3)	0 (+1)	0 (+2)

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E-spell checker								
E-Google	0 (+1)	1 (+5)	3 (+3)	3 (+11)	2 (+1)	1 (+3)	0 (+3)	0 (+1)
E-Wikipedia/ Encarta	0	0	0	0	0	1	0 (+1)	0 (+10)

5.4.1   The use of external resources in L1 translation – inter-group comparison

In terms of external resource consultations in L1 translation, the four groups differed rather significantly. Groups A and C consulted external resources only 31 and 32 times (in connection with 20% and 13% of their problems) respectively, compared to Groups B and D, who made a total of 80 and 70 consultations respectively (in connection with 32% of their problems). Roughly speaking, in L1 translation Groups B and D consulted external resources twice as much as the other two groups.

As far as the type of external resource is concerned, the groups again followed different patterns. For Group A, the most popular resource was the bilingual English-Croatian dictionary ("Bujas"), followed by printed parallel texts and parallel texts found with the help of Google. The printed encyclopedia came next, while electronic encyclopedias, monolingual dictionaries or the spelling manual were not used by this group. Group B also consulted the bilingual dictionary most often, followed by Google, followed by printed monolingual dictionaries and the spelling manual. The printed encyclopedia and parallel texts came last for this group. Group C was an exception in that for them the most popular external resource was not the bilingual dictionary but rather Google. The bilingual dictionary came in second, followed by the monolingual dictionaries and the printed encyclopedia. Printed parallel texts and the spelling manual were also consulted, with electronic encyclopedia and the collocations dictionary came last. Group D's most popular resource was the bilingual dictionary, followed by the printed encyclopedia, followed by Google. This group also consulted the electronic encyclopedias and monolingual dictionaries, the spelling manual, as well as the collocations dictionaries and printed parallel texts, in that order.

For groups A, and D the bilingual dictionary was the only external resource which produced solutions that were actually selected for the final version of the translation (five times in the case of Group A, and seven times in the case of Group D). Group B also seems to have found the bilingual dictionary most useful in terms of providing solutions that they ended up selecting (seven times), as did Google (three

times). Group C selected solutions found in an external resource only four times, twice thanks to Google, once the bilingual dictionary and once the spelling manual.

The bilingual dictionary also seems to have provided the three groups with additional "help" in inspiring or confirming spontaneous solutions, as did Google (Group B and D) and the printed encyclopedia (Group D). The contribution of the other external resources was meager.

5.4.2 *The use of external resources in L2 translation – inter-group comparison*

In L2 translation, the groups again differed in their use of external resources, both in terms of the number of problems in connection with which a resource was consulted (from 19 in Group A to 46 in Groups B and D) and – even more prominently – in terms of the total number of consultations. The latter ranged from only 30 in Group A to no less than 128 in Group D, the remaining two groups having made 74 and 66 consultations each. Roughly speaking, Groups B and D consulted external resources twice as much as Group A, while Group D did so more than four times as much.

When it comes to the type of external resource consulted, most groups (A, B, and D) again favored the bilingual (Croatian-English) dictionary. In this direction of translation too, Group C made most consultations with the help of Google, followed by the bilingual dictionary. Google shared the first place with the bilingual dictionary also in the protocol of Group B, and it was the second most favorite resource for Group A. Apart from the bilingual dictionary, Group D favored Wikipedia, while Group A's second most popular resource was a monolingual dictionary. The remaining three groups also made a lot of use of monolingual dictionaries, and Group C in particular consulted the collocations dictionary quite often. Another significant resource for Group D were the printed parallel texts.

In terms of "usefulness", the groups again varied. Group A found solutions from external resources worth using in the final version of their translation only four times (three of which were found in the bilingual dictionary, one with the help of Google). The other three groups found the solutions from external resources a bit more usable, and adopted them as the selected solutions 12 to 18 times. For Group B, the most useful seems to have been the bilingual dictionary (13 times), while for Groups C and D the contribution from the different resources was more evenly distributed.

Group A found Google most "helpful" with inspiring or confirming their spontaneous solutions, as did Group B. For Group D, the most helpful seem to have been Wikipedia, the monolingual dictionaries and printed parallel texts.

5.4.3   The use of external resources – L1 and L2 translation compared

When we compare the groups' use of external resources in the two directions of translation, we can see that Groups B, C, and D consulted external resources in connection with more problems in L2 translation than they did in L1 translation. This was not so for Group A, who consulted external resources in connection with 20% of their problems in L1 translation, compared with 16% in their L2 translation.

As far as the total number of consultations is concerned, Groups A and B both made (a few) more consultations in their L1 translation task. The other two groups, on the other hand, consulted external resources twice as often in L2 translation (Group C, 32 compared to 66 consultations) or almost twice (Group D, 70 compared to 128).

When it comes to the type of external resources used, the bilingual dictionary and Google seem to have been most popular in both directions. The collocations dictionary was more popular in L2 translation – predictably, as this was a dictionary of English collocations and such a resource does not exist for the Croatian language. In L2 translation, Group D consulted printed parallel texts considerably more often than in the other direction. Most of these consultations had to do with style and formatting.

The external resources seem to have been more useful in L2 translation in terms of providing solutions that ended up being adopted as the selected solutions, or in inspiring spontaneous solutions that were used in the final product. In L1 translation, most of the selected solutions were found in the bilingual dictionary, while in L2 translation the other resources also contributed.

5.4.4   Discussion

Given the discrepancies in the data from the four groups, it is very difficult to formulate anything but the most tentative of conclusions. The groups tended to rely more on external resources in L2 translation in the sense that they actually used the solutions found in those resources in their final product more often than they did in L1 translation. It also seems likely that resources other than bilingual dictionaries

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(especially the electronic resources) can provide more help in L2 translation, at least when the L2 in question is English. This can easily be explained by the abundance of materials in English on the Interned, compared to the number of texts and tools available in a language of limited diffusion such as Croatian.

When it comes to types of resources consulted, it seems that group profiles, or individual preferences for a certain type of resource, might play a more important role than does directionality.

5.5   Revisable elements in the target texts

The issue of evaluation of target texts in research into translation processes has been discussed in section 2.3.8, and the evaluation system used in this study has been described in section 3.7.2. The terms "revisable element," "acceptable solution," "red card," "yellow card," and "revisability score" have been defined and discussed in section 4.7. In this section we will:

- Present the findings on the number of acceptable solutions and their percentage relative to the total number of problems encountered by the groups in each task;
- Present the findings on the revisable elements, i.e. the number of "yellow cards" and "red cards" in each target text, as well as the resulting "revisability score";
- Present the findings on non-verbalized revisable elements (those not discussed by the subjects, i.e. not related to parts or aspects of text identified as "problems");
- Compare groups and directions.

Table 14 – Revisable elements

	GROUP A		GROUP B		GROUP C		GROUP D	
	L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*
Problems	113	122	130	125	115	116	108	112
Acceptable solutions	105 (**92.92**%)	114 (**93.44**%)	117 (**90**%)	113 (**90.4**%)	108 (**93.91**%)	104 (**89.66**%)	103 (**95.37**%)	103 (**91.96**%)
Total RC	1	9	4	9	5	10	2	7
Total YC	9	2	10	8	4	7	4	6
score	**5.5**	**10**	**9**	**13**	**7**	**13.5**	**4**	**10**
verbal. RC	0	6	4	6	3	6	2	3
verbal. YC	8	2	9	6	4	3	3	4
non-v. RC	**1**	**3**	**0**	**3**	**2**	**4**	**0**	**4**
non-v. YC	**1**	**0**	**1**	**2**	**0**	**4**	**1**	**2**

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Columns in Table 14 present the findings concerning the number of revisable elements for each group and in each direction of translation. The first row gives the total number of problems each group verbalized in the given collaborative translation task. The second row gives the number of acceptable selected solutions to those problems, as well as the proportion of acceptable solutions relative to the total number of problems in the given task. The next two rows present the total number of "yellow" and "red cards" for each group and each task. The row marked "score" presents the groups' "revisability scores," i.e. the sum of penalty points for "red cards" (a point for each) and "yellow cards" (half a point for each).

The next section of the table presents the breakup of revisable elements into verbalized and non-verbalized red and yellow cards. "Non-verbalized" are those not related to what has been defined as "problem" for the purposes of this study.

5.5.1   L1 translation – revisable elements – inter-group comparison

For the verbalized problems, acceptable solutions were selected in a vast majority of cases by all four groups (between 90% in Group B and over 95% in Group D). In other words, the groups managed to resolve successfully most of the problems they discussed during the translation task. In this direction of translation, the groups got between one (Group A) and five (Group C) "red cards", and between four (Groups C and D) and ten (Group B) "yellow cards". The best (i.e. lowest) revisability score was achieved by Group D (4), closely followed by Group A (5.5). Groups C and B scored 7 and 9 respectively.

If we consider the number of red and yellow cards that the groups got for those elements that they did not verbalize as a problem (as defined in section 4.4), we can see that this number is small, ranging from one (Groups B and D) to two (Groups A and C).

5.5.2   L2 translation – revisable elements – inter-group comparison

In L2 translation, most problems encountered by all four groups were successfully resolved (between 89.66% in Group C and 93.44% in Group A). The groups got between seven (Group D) and ten (Group C) "red cards," and between two (Group A) and eight (Group B) "yellow cards". The best (i.e. lowest) revisability score was

achieved by Groups A and D (ten) with groups B and C getting a score of 13 and 13.5 respectively.

In this direction of translation, the number of non-verbalized red and yellow cards ranged between three (Group A) and as many as eight (Group C).

5.5.3 Revisable elements – L1 and L2 translation compared

If we compare the figures in the two directions of translation, we can see that all four groups had lower revisability scores in L1 translation (mean value: 6 in L1 translation, compared to 12 in L2 translation, see Table 15). This would indicate higher quality products in L1 translation compared to L2 translation.

Table 15 – Revisability scores: L1 and L2 translation compared

	Group A	Group B	Group C	Group D	Group mean value
L1	5.5	9	7	4	6
L2	10	13	13.5	10	12

When we look at the group percentage values of acceptable solutions to verbalized problems, they are slightly higher in L1 translation, but not that much (group mean values: 93.05% in L1 translation compared with 91.37% in L2 translation). However, there are more revisable elements in L2 translation, in particular the red cards (see Table 16), the number of which is higher in L2 translation for all groups.

Another difference between L1 and L2 translation is in the number of "non-verbalized" red and yellow cards. All groups had more non-verbalized red and yellow cards in L2 translation than they did in the other direction.

Table 16 – Red and yellow cards (group mean values)

	"Red cards"	"Yellow cards"
L1	3	6.75
L2	8.75	5.75

5.5.4   Discussion

The findings regarding revisability scores in the two directions do not seem surprising. Even though all four groups managed to resolve successfully the vast majority of their problems in both directions of translation, their L2 translation products – at this level of L2 competence and translation competence – would still require more revision effort than in the other direction. The presence of red cards, or unpublishable elements, in L2 translation is of course the greatest cause of concern.

It is interesting to consider the data regarding the verbalized vs. non-verbalized revisable elements. While the former could be said to belong to the domain of "conscious incompetence," the latter might be described as indicators of "unconscious incompetence" (cf. González-Davies 2004: 40). For all groups the "unconscious incompetence" markers were higher in L2 translation. Awareness raising might thus be an important step in the development of L2 translation competence.

5.6   Actions / interactions: group profiles

The terms "action/interaction" and "group profile" have been defined in section 4.8. In this section, which is based on our qualitative analysis of the collaborative translation protocols, we will:

- Compare the findings regarding actions/interactions of the four groups;
- Outline "group profiles".

Table 17 – Actions/interactions

	read ST	read TT	propose tS	consult xR	postpone	type TT	discuss	joke	non-task
A	✓ ✓	✓	✓ ✓	✓	✓ ✓	✓	✓ ✓	✓	✓
B	✓	✓	✓ ✓	✓ ✓	✓	✓	✓ ✓	✓ ✓	✓
C	✓	✓ ✓	✓ ✓	✓	✓	✓	✓ ✓	✓ ✓	✓ ✓
D	✓	✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓

Based on the collaborative translation protocols of the four groups, we have singled out the actions/interactions most relevant for creating group profiles: reading the

source text, reading the target text, proposing tentative solutions, consulting external resources, postponing the final decision, typing the target text, seeking or offering opinion (here abbreviated to "discuss"), joking, and actions/interactions that were not task-related (see section 4.8 for explanations of each). Table 17 thus shows a matrix of actions/interactions performed by each group. All actions/interactions were observed in the protocols of all groups, albeit to different degrees. It is impossible to count the actions/interactions with any degree of exactness so it does not make much sense to present the figures or do a statistical analysis. A rough "count" gave us an idea of what kinds were *predominant*, and the findings are based on that. A double checkmark thus shows that an action/interaction was dominant in the protocol of the given group.

In the sections that follow we outline the group profiles on the basis of these actions/interactions.

5.6.1   Group profile – Group A

All four groups read the source texts at the beginning of their translation tasks, but Group A spent much more time than the others going through the ST, identifying and discussing problems and proposing some tentative solutions before starting to put together the first sentence. In this respect, their protocols are quite unlike those of the other three groups. Group A was thus a little slow to get going, but their actions/interactions picked up momentum as the tasks progressed. This group also spent less time joking than the other three, and they did not engage in many non-task-related actions/interactions or verbalizations. Periods of silence were more frequent than in the other groups. In both directions, they used external resources much less than the other groups.

5.6.2   Group profile – Group B

Group B read the source texts first, then translated sentence by sentence, typing (parts of) sentences as they agreed on the final versions. This group did not identify problems in advance, or leave any "slashes" in their translation. They did, however, leave some gaps in the target text, as they left most of their Internet searches for particular cultural elements until they had translated everything else. They did not normally read the target text sections until they got to the end, when they read the whole text and made minor

revisions. They made much use of external resources in both directions, even when they had spontaneously produced a perfectly good tentative solution or several of them. They used Google frequently, especially to confirm tentative solutions produced spontaneously or found in other external resources. The group joked a lot, but their jokes and actions/interactions in general were almost exclusively task-related. Their verbalizations, especially those related to tentative solutions, were not as rich as in the other groups. This group's translation process was most "linear" of the four, and they were the quickest to finish their tasks.

5.6.3   Group profile – Group C

This group read the source texts first, identifying several potential problems but without getting into a discussion about them. After that, they started translating sentence by sentence. They read (parts of) the target text very often, until they were satisfied with their translation. Only then would they move on to the next sentence. They used some postponement, occasionally leaving a gap in the target text where the element they did not know how to translate should go. This mostly applied to translations of the cultural items and historical names in the text, some of which they left until the end to check. Their favorite external resource was Google. They used external resources very sparsely in their L1 translation task, and more frequently in the other direction but even then not as much as Groups B and D. After they had translated the text and finished their search for the missing elements, they read the whole translation a few times, making some additional revisions. This group spent a lot of time discussing tentative solutions, and their verbalizations are in general very rich. They also joked a lot. Group C spent most time on actions/interactions and verbalizations that were not directly task-related, which was occasionally detrimental for their concentration.

5.6.4   Group profile – Group D

This group also read the source text at the beginning, identifying some problems without discussing them. They did the translation sentence by sentence, typing (parts of) the target text as they progressed. Sometimes they wrote it down to – in their words – "try it out for size," or "see what it looks like". They dominant action/interaction was postponement, especially with "slashes". They would come up with a large number of

tentative solutions, discuss them, and often write down several of them with the intention of "revisiting" the problem at a later time. Alternatively, they would write down only one tentative solution but highlight it for later consideration. They used external resources frequently in both directions, especially in their L2 translation task. They combined different external resources. Most of the time, they used the external resources to confirm the solutions that they had arrived at spontaneously, but sometimes they also looked up a word or phrase "to get ideas". This group also joked a lot, but their jokes and other actions/interactions were almost exclusively task-related.

5.6.5   Discussion

All groups worked highly cooperatively and approached the assignment very seriously, persisting at the task until they were satisfied with the result. Saying that they worked "seriously," however, is not to say that they *were* serious, grave or tense during the tasks. On the contrary, all four groups seemed very relaxed and joked a lot, Group A slightly less than the other three. Of all the actions/interactions, joking was by far the most frequent type in Groups B, C, and D. It seems that, for all the groups, joking was a way of maintaining a positive, creative and cooperative atmosphere conducive to free associations and brainstorming, and one in which differences of opinion were less likely to be perceived as face-threatening (cf. Kussmaul 1995: 48). In the protocols of Groups A, B and D the jokes were more task-related and seemed to be less distracting.

Although in all the groups the subjects knew each other and had worked together before (in class), this was especially true of Group C, where all three subjects are close friends. As a result, their talk often wandered off the task at hand. Thus in this group's L1 translation task, as many as 16 "prompts" were found among the verbalizations. By "prompts" we mean expressions such as "let's move on" or "come on, let's get back to work". It would be misleading to say that Group C did not take the task seriously; rather, this was their style of working. It did, however, earn them a red and a yellow card, when a correctly translated element never made it to the typed version because the "typist" was laughing. The other two members of the group were also too distracted to notice that the element had gone missing. The other three groups' processes were much more task-oriented, even though the atmosphere was also very relaxed.

The joking part was also interesting as an indicator of how relaxed the subjects were during the course of the experiment, in spite of being recorded. Although some of

them made occasional references to the recording, the nature of some jokes suggests that the subjects were not *fully* aware of taking part in a research experiment at all times.

For Groups C and D, reading (parts of) the target text was an important action/interaction. However, they did it in different ways and with different aims. In Group C, the "typist" Sanja would read each clause, and again each complete sentence, sometimes more than once, for the group's monitoring. With very few exceptions, they stayed with the same sentence and read and re-read it until they were satisfied with the result. Only then did they move on to the next sentence. At the end, they re-read the whole translation a few times. On the other hand, Group D used the reading of the target text in the first phase of their processes to "get ideas" (their words) for the parts of the text that had not been translated yet, rather than for output monitoring. Whole, finished sentences were rarely read in this group at that stage. In fact, finished sentences *were* rare, as this group's key action/interaction was postponing the final decision. In the second phase of their processes, the group went through the text again, this time making final decisions regarding unresolved problems. The reading of the TT was a frequent action/interaction during this stage, with whole sentences or clauses being read and re-read repeatedly until the group was satisfied. Finally, the group returned to the one or two problems they could not resolve even the second time round and focused only on them.

Interestingly, Group C postponed the final decision much less frequently in L2 translation than they did in the other direction (roughly 1:3). Their postponement was in general slightly different than Group D's. They almost never wrote down alternative tentative solutions in the target text but rather stayed with the sentence until they were all satisfied. Their postponement had to do with the items that they were not able to immediately find or check in external resources, and they left this for last. Group B also postponed their search for cultural elements and historical names until the very end. Otherwise, this group made no use of postponement. Group A postponed in yet another way. For them postponement happened at the very beginning, before they even started writing anything down. During the first stage of their processes, they identified a large number of problems and moved from problem to problem apparently without making much attempt at finalizing their decisions.

The groups' "discussions" are the topic of the next section, which deals with verbalizations.

As can be seen from the group profiles presented above, each group had their different style of working collaboratively on the translation tasks. Even though some slight differences in the distribution of some actions/interactions can be observed in the protocols, the groups' actions/interactions in general seem to be related to a particular group's style of working – what we have labeled "group profile" – rather than to the direction of translation.

5.7   Verbalizations

In section 4.9 we presented our classification of verbalizations with a wealth of examples from the collaborative translation protocols. Here we compare the distribution of the different types of verbalizations in the four groups and the two directions of translation.

5.7.1   Verbalizations – inter-group comparison

Generally speaking, the collaborative translation protocols of Groups C and D contain more verbalizations than the protocols of Groups A and B. In the protocols of Group C we found a lot of non-task-related verbalizations, while the protocols of the other three groups hardly contain any such verbalizations. Interpersonal verbalizations, as well as those related to self, were also more prominent in the protocols of Group C than in the other groups.

In all the four groups, the most abundant were the verbalizations related to tentative solutions, followed by those related to actions/interactions. Verbalizations related to the different problems were also frequent, with comments on the translation task, group performance, the source text and resources appearing sporadically.

5.7.2   Verbalizations – L1 and L2 translation compared

In the collaborative protocols of all four groups, more verbalizations are found in L1 translation task than in L2 translation task. This difference is particularly prominent when it comes to verbalizations related to tentative solutions (see Table 18).

Table 18 – Types of verbalizations in L1 and L2 translation compared

	Group A		Group B		Group C		Group D		Mean values	
	L1	L2	L1	L2	L1	L2	L1	L2	L1	L2
Personal	0	0	0	0	3	6	0	1	0.75	1.75
"Sounds better"	43	29	39	21	51	34	100	84	58.25	42
Free association	7	1	1	3	7	9	5	3	5	4
"Sounds as if"	37	18	18	10	22	12	22	14	24.75	13.5
"Said that way"	23	12	12	4	16	8	15	6	16.5	7.5
"Rule"	15	5	13	7	18	15	17	6	15.75	8.25
Pragmatic	29	21	10	8	23	12	21	24	20.75	16.25
TT reader	1	2	1	0	4	0	6	1	3	0.75
ST "meaning"	52	46	20	19	26	25	31	18	32.25	27
Total	207	134	114	72	170	121	217	157	177	121

Table 18 shows the number of instances each type of verbalization occurred in the collaborative translation protocols of each group in each direction. We will now look at various categories of those verbalizations, and compare directions:

- Verbalizations from the category "sounds better" (see 4.9.1.2) are the most numerous type in both directions, but more so in L1 translation;

- The category "sounds as if" (see 4.9.1.4) is more prevalent in L1 translation, and so is the category "said that way";

- "Rules" (see 4.9.1.6) are evoked in both directions, but more frequently in L1 translation;

- Pragmatic / textual reasons (see 4.9.1.7) are offered as arguments in the verbalizations of tentative solutions very frequently in both directions. They are on average more numerous in L1 translation, although for Group D this category is more numerous in L2 translation;

- The target-text reader (see 4.9.1.8) is rarely mentioned, especially in L2 translation. Groups B and C do not mention the TT reader in their L2 translation at all;

- Finally, all the groups spent a lot of time discussing what a particular source text element "means" and "what the author wanted to say" (see 4.9.1.9) in both directions of translation. The verbalizations related to the perceived meaning of the source text and the interpretations of the author's intention are more abundant in L1 translation, although the difference between the two tasks is not as big as could be expected.

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5.7.3   Discussion

The verbalizations related to tentative solutions offer an insight into the decision-making processes in the translation tasks in the two directions. They help us examine the arguments that were used in assessing the comparative values of a particular tentative solution against the other tentative solutions, but also against the subjects' "vision" of what the target text and its various segments should look like in the end. They further shed light on the way the subjects collaboratively construct the "meaning" of the source text and adjust their target text vision accordingly.

The subjects' reliance on how something "sounds" is a possible signal of unconscious competence, which in turn is the result of all the past experiences with translation in general, and these specific target languages in particular. The various skills or "rules" might have been consciously learned in the past but have now been internalized to the point where they escape exact definitions or explanations. Something simply "sounds good," "better" than something else, or it sounds "strange" or "awful". In both directions, the subjects' "feeling" for language expressed in this way is very much present in the verbal protocols, more so in L1 translation.

Evocation of explicit rules belongs to the domain of conscious target-language competence. It is interesting that the subjects verbalized a lot of grammatical and orthographical rules in their L1 translation as well as in their L2 task. This may be related to the specificities of this particular L1; as we mention elsewhere (6.1.5), standard Croatian is a source of insecurity even for educated L1 users.

The verbalizations further indicate that the subjects have a highly developed sense of textual and pragmatic aspects of both target languages (L1 and L2). In both directions of translation, considerations of "style," such as the level of formality, cohesion and coherence, consistency, and so on, are very prominent. It might be hypothesized that translators at lower levels of L2 competence and/or with less experience in translation would not give these matters as much consideration as did our subjects. For more experienced translators, these arguments might be expected to play an even more important role.

The most prominent difference between the two directions of translation seems to be in the verbalizations that we have labeled "sounds as if" and "said that way" using *in vivo* codes from the protocols. In the case of the former, as we explain in section 4.9.1.4,

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a subject rejects a particular tentative solution because to him or her it "means" something other than what they "need". In the latter case, the proposed solution is at odds with target-text usage: a word or, more typically collocation, is unusual, perhaps it even "doesn't exist". Solutions that in the target language "mean" something other than what the translator is looking for and solutions that are "not said that way" are rejected. Those solutions, on the other hand, which conform to translators' understanding of the source text and their experience of how something is said in the target language, are selected. Both of these categories of verbalizations are far more abundant in L1 translation. This is where "native competence" seems to have a distinct edge over L2 competence (at least at this level of L2), providing tighter (more stringent) output monitoring and, as a result, urging the translators to keep looking until a satisfactory solution is found.

It is very interesting to note that the subjects' verbalizations related to the perceived "meaning" of the source text – "what the author wanted to say" – are very much present in the protocols of both directions of translation. For Groups A and D, they are slightly more plentiful in L1 translation, but the remaining two groups discussed the source text meaning in almost as many instances in their L2 task as they did in L1 translation (cf. Beeby Lonsdale 1996: 50 and *passim*). This could be related to the specific language pair in question, and other factors that could be involved are the type of text, the subjects' familiarity with the topic or their lack thereof, as well as their L2 competence (which was relatively high in the case of our subjects).

In this chapter we have presented our findings based on the data from the collaborative translation protocols. In the next chapter, we look into the data from the pre- and post- translation questionnaires.

6   Findings from the questionnaires

All the 12 subjects taking part in the central experiments of this study were asked to fill out pre- and post-translation questionnaires. The questionnaires can be found in Appendix B. Here we report on the findings from those questionnaires. (The findings

from the questionnaires filled out during the course of the control experiments can be found in section 7.2.2.)

6.1 Findings from the pre-translation questionnaire (Q1)

In the pre-translation questionnaire, the subjects were asked about their background and attitudes regarding individual vs. collaborative translation and regarding the direction of translation. Here are the main findings:

6.1.1 The subjects' background

At the time of the experiments, all the 12 subjects had been studying English for at least 12 years. Apart from the obligatory courses in translation practice (see section 3.3 for details), three of them had also taken a translation seminar, and five a course on translation theory (two of the latter had taken both). The remaining six subjects had taken neither a seminar nor a theoretical course. In each group, at least one person had taken either a theoretical course or a seminar, or both.

As far as the subjects' previous experience in translation outside the educational setting is concerned, three of them reported having some experience in both directions of translation, four of them mostly in L1 translation, and two mostly in L2 translation. In most of these cases, the translations were done as a (paid or unpaid) favor to friends or relatives. Only three subjects reported having had no experience in translation outside the university. Again the groups were made up of individuals with varying degrees of experience, i.e. in each group there were at least two people who had some experience in translation, at least one of whom had also translated into L2.

6.1.2 Reading habits

Regarding the subjects' reading habits in the two languages, the questionnaire asked them to state how often in the past year they had read various types of texts, ranging from "never" (1) to "very often" (5). The mean values are given in Table 19.

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Table 19 – Reading habits

Type of text	Croatian (L1)	English (L2)
novels	3.67	4.17
short stories	3.5	3.5
poetry	2.25	2.5
written news reports	4.67	3.33
news reports on TV	4.67	2.85
longer newspaper / magazine articles	4.25	3.25
academic texts	3.33	3.25
technical / specialized texts	2.58	2.85
travel guides and brochures	2.17	2.42
forum posts	3.25	3
films with subtitles	(4.67)	4.67
films without subtitles	4.17	3.83
overall mean values	**3.5**	**3.3**

As Table 19 shows, the overall values for L1 and L2 are only slightly in favor of L1. Certain types of texts are actually read more in L2, most notably novels, poetry, technical / specialized texts and travel guides. Short stories are reported to be read as frequently in both languages, and the values for academic texts are also very close. It is interesting to note that travel guides, the type of text which was used in the experiments and which is frequently translated in both directions in the Croatian translation market, were reported to be the least frequently read text type in both directions.

6.1.3   Use of electronic resources

The subjects were further asked about their habits regarding the use of electronic resources. The question "How often have you used the Internet in the past year as a translation aid?" with replies on the scale of 1 to 5 (1 meaning "never" and 5 "very often"), yielded the mean response value of 4.17, with 9 subjects replying "very often" or "often," and not a single subject replying "never".

6.1.4   Satisfaction with L1 and L2 competence

The subjects were asked to grade their satisfaction with the level of their L1 and L2 competence on the scale of 1 (very dissatisfied) to 5 (very satisfied). (The question was

framed in lay terms asking them how they "feel about their knowledge" of Croatian and English). The subjects' satisfaction with their L1 on average proved to be only marginally higher than their satisfaction with L2 (4.1 and 3.9 respectively). Three subjects expressed higher satisfaction with their L2 competence than they did with their L1 competence, five were happier with their L1 than with their L2, while the remaining four were equally happy with their knowledge of both languages (giving both the grade of 4).

6.1.5 Attitudes regarding directionality

When asked which direction of translation they prefer, six of the subjects expressed no preference, four said they preferred to translate into L2, and only two expressed their preference for L1 translation.

The subjects were further asked which direction they found easier. The replies to this question were more predictable, with nine subjects choosing L1 translation and the remaining three opting for L2 translation.

The open-ended question in which the subjects were asked to explain their preferences regarding directionality yielded some interesting answers. Thus Nevena says: "My [L2] translations can never reach the level of quality I want them to and that makes me a bit frustrated," and Vlatka feels "more confident" when translating into L1 because she can rely on her knowledge of Croatian as her mother tongue. For Ivan, who has no preference regarding directionality, it is nevertheless easier to translate into L1 "as sentence structures come naturally". Nevena similarly states that her translations into L2 sound "too rigid" and complains that she "can't seem to construct sentences which would sound more natural" in English. Marta echoes their view when she says that "knowing whether something sounds natural in my own language comes as a given". Even though she likes both directions equally, for her "translating into English [L2] represents more of a challenge and requires more energy".

This challenge is seen as positive by some of the subjects. Thus Janica says, "I find it easier to translate into my mother tongue because I'm more familiar with it, but I prefer translating into a foreign language because I find it more challenging". L1 translation is also "easier but less fun" for Sanja, who says, "I find it more fun to translate from Croatian into English because it's a challenge to my competence in English and a test of my skill. It's more thrilling for me". She admits, however, that

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"you can never feel completely safe when translating into a foreign language". The "feeling of uneasiness that accompanies this walking on 'dangerous ground'" in L2 translation "can sometimes inhibit your creativity". In L1 translation, on the other hand, she says she knows she is "on safe ground," although there are "exceptions where translating into my mother tongue can give me more trouble than translating into English".

Tina feels that each direction "has its charms" but finds L2 translation easier. "My thoughts run faster and my concentration is much better when I think in English," she says. Irena echoes her sentiments when she says, "it's easier for me to find the right expression in English [L2] than in Croatian [L1]". Some of the subjects say that for them English is a richer and more idiomatic language than Croatian, which is why Marija says, "no matter how hard I try translating into Croatian, [the translation] just never sounds as good as the original English text".

Irena and Ana point out that the level of difficulty and their preference depend on the type of text they are asked to translate.

Asked to write down what for them are the main difficulties in L1 translation, the subjects listed orthography, punctuation (in particular the use of commas), word order, grammar in general, especially the "changes that the Croatian language is undergoing" because of which, according to Janica, "you never know which rule to apply". For Nevena, "it takes a lot of time and imagination to find the right expression in Croatian which would completely match the original phrase in English". Sanja points out that "English has a load of idioms, phrases and syntactic structures for which I can't find an appropriate translation in Croatian".

Among the difficulties of L2 translation, they mention the complicated Croatian sentence structure in source texts, which makes production of clear and concise target texts difficult, "style" in general, "choosing the words that work best in a given context", English articles and tenses, as well as phrasal verbs, which are "easy to recognize but don't easily come to your mind when you're translating". For Vlatka, the most difficult aspect of L2 translation is "confirming whether I have chosen the correct translation when a difficult item is concerned, even after all the 'strategies' have been applied and the evidence turns out to be 'inconclusive'".

It is interesting that the following difficulties are mentioned in both directions of translation: collocations, colloquial expressions, specialized terminology, cultural differences, and interference from the source language.

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Evidently, many of these concrete sources of difficulty are closely connected to the specificities of the language pair in question, and may not apply to all languages. For instance, the insecurities Croatian translators (and language users in general) experience regarding their own standard language may be more pronounced than is the case of languages with a more stable sociolinguistic past. As HAZU, the Croatian Academy of Arts and Sciences, admits in a document entitled "The Croatian Language",

> […] most Croats have developed an awareness of the fact that their standard language is not the same as their everyday spoken language or any of its dialects or varieties […]. Most Croats are aware that their standard language needs to be studied systematically. (HAZU 2007)

6.1.6   Career plans

We asked the subjects if they wanted to work as translators in their future professional careers, and to what extent. Six of them said they would like to be full-time translators, and the remaining six would prefer to translate part time. Their plans seem to coincide with reality insofar as our questionnaire on professional translation practice in Croatia found that around half of those who engage in translation on the Croatian market work as full-time translators (see section 2.1.4).

6.1.7   Attitudes regarding individual vs. collaborative translation

The subjects were asked to rate how much they liked to translate on their own, on the scale between 1 ("strongly dislike") and 5 ("like very much"). The mean response value was 4.25, with ten subjects choosing "like" (4) and "like very much" (5), and only two selecting the middle value (3).

The same question was asked in relation to collaborative translation, which yielded a slightly lower value of 3.67. When they were asked whether they prefer to translate on their own or with others, seven subjects said they were happy either way, four preferred working on their own, and one subject expressed her preference for collaborative work.

6.2   Findings from the post-translation questionnaire (Q2)

At the end of each translation task, the subjects were asked to fill out the (corresponding section of the) post-translation questionnaire, which asked them to assess their translation products and processes, as well as the way their group collaborated. The questionnaire can be found in Appendix B.

6.2.1   Quantitative data

Table 20 shows the replies of all 12 subjects, as well as the mean value for each category. The subjects were asked to grade, on the scale of 1 to 5, the following aspects of the tasks:

a)   Their satisfaction with each final product (1 – very dissatisfied; 5 – very satisfied);

b)   Their satisfaction with each translation process (1 – very dissatisfied; 5 – very satisfied);

c)   How difficult they found each task (1 – very easy; 5 – very difficult);

d)   How much they enjoyed each task (1 – not at all; 5 very much);

e)   The relations in their group during each task (1 – very conflicting; 5 – very cooperative);

f)   The atmosphere in their group during each task (1 – very dull; 5 – very creative).

Table 20 – Introspective assessment of L1 and L2 collaborative translation tasks

	a		b		c		d		e		f	
	L1	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*	*L1*	*L2*
A1 – Tanja	4	4	4	3	2	3	4	3	4	4	2	3
A2 – Mislav	4	5	5	5	3	3	5	5	5	5	5	4
A3 – Ivan	5	4	4	4	3	3	5	5	5	5	2	4
B1 – Janica	4	4	5	5	4	3	5	4	5	5	5	5
B2 – Tina	4	4	5	4	3	3	5	4	4	4	5	4
B3 – Ana	5	5	5	5	2	4	5	5	5	4	5	5
C1 – Irena	5	5	5	5	3	3	5	5	5	5	5	5
C2 – Sanja	4	5	5	5	3	2	4	4	3	5	4	4
C3 – Marija	4	4	5	5	4	3	5	5	4	5	5	5
D1 – Nevena	5	5	5	5	3	4	5	5	5	5	5	5
D2 – Marta	5	5	5	5	3	3	5	5	5	5	5	5
D3 – Vlatka	4	5	5	5	2	2	5	5	5	5	5	5
mean	**4.4**	**4.6**	**4.8**	**4.7**	**2.9**	**3**	**4.8**	**4.6**	**4.6**	**4.8**	**4.4**	**4.5**

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Columns *a, b, c, d, e* and *f* in Table 20 show the numerical values for each of the above categories. The subjects seem to have been highly satisfied with their products and processes in both directions. The relations and the atmosphere in their respective groups also received high grades. The difficulty of both tasks was assessed to be somewhere on the mid-point between very easy and very difficult, which would indicate that an appropriate level of text difficulty was chosen for the tasks.

As can be seen from the table, the mean values for the categories are not very different in the two directions (between 0.1 and 0.2 in favor of either L1 or L2).

The subjects were further asked to *directly* compare the two tasks in terms of their satisfaction with the final product, the difficulty of the tasks and their enjoyment of them. The findings are in Table 21.

Table 21 – Satisfaction, difficulty and task enjoyment

	satisfaction w. product	*task difficulty*	*task enjoyment*
A1 – Tanja	L1	L2	L1
A2 – Mislav	same	L2	same
A3 – Ivan	L1	L2	L1
B1 – Janica	L1	L1	L2
B2 – Tina	same	L1	L2
B3 – Ana	same	L2	L1
C1 – Irena	L2	L1	L2
C2 – Sanja	L2	L1	L2
C3 – Marija	same	L1	L2
D1 – Nevena	same	L2	L1
D2 – Marta	same	L1	L2
D3 – Vlatka	L2	L1	L2
	more satisfied w. L1: 3 more satisfied w. L2: 3 equally satisfied: 3	L1 more difficult: 7 L2 more difficult: 5	enjoyed L1 more: 4 enjoyed L2 more:7 enjoyed equally:1

As Table 21 shows, three subjects were more satisfied with their L1 translation product, three with their L2 product, and three were equally satisfied with both. Seven of the 12 subjects found the L1 translation task more difficult than the task in the other direction. The same seven subjects enjoyed the L2 translation more, while only four enjoyed working in the other direction more. One person was equally happy working in both directions, although he found the L2 task more difficult. There seems to be a (rather unsurprising) correlation between the task difficulty and the subjects' enjoyment of the task: the more difficult the task, the less enjoyment. On the other hand, there does not seem to be a clear correlation between the difficulty and enjoyment on the one hand, and the subjects' satisfaction with their final product on the other. Furthermore, there

does not seem to be any correlation between these introspective findings and the external evaluators' assessment of the quality of the final products.

6.2.2   Qualitative data

The open-ended questions asked the subjects to write whatever additional comments they might have on directionality or collaborative work. Here we report on some of their replies.

6.2.2.1   The subjects' comments related to directionality

Some of the subjects' remarks regarding directionality of translation were similar to the ones we reported in section 2.1.4. Among the observations that were not mentioned in the pre-translation questionnaire is Tanja's comment that in L1 translation her group could have done with a Croatian collocations dictionary (a resource that, unfortunately, does not exist at this time). Nevena commented that she could express her ideas "better or more clearly" in their L1 translation task. An interesting view is that expressed by Janica, who said that her group did better in the L1 translation task because it was "more difficult" and as a result they "put more effort into it". However, there is no correlation in her colleagues' assessments between task difficulty and product satisfaction, or indeed between either of these and the external evaluators' assessment of product quality.

Marta's observations regarding the difference in the two tasks are also worth mentioning. She said the following:

> Translating into English [L2] went faster, which I think happened because we agreed on the final version more easily. [In L1 translation] we each had our own vision of the subtle meaning the original author wanted to convey in English.

Her emphasis here seems to be on the subtle differences in the way each team member received and understood the English source text. The "vision" she describes refers to the perceived ST meaning, but it could be argued that this "source text vision" is also closely related to what we in this study have termed "target text vision".

She also points out that in L2 translation checking the grammatical as well as cultural elements in English (as target text) was easier "simply because there is much more material available on the Internet."

6.2.2.2 *The subjects' comments related to collaborative vs. individual translation*

The subject's comments related to collaborative translation were overwhelmingly positive. The argument in favor of collaborative vs. individual translation that stands out most is one of greater "fluency" in this mode of translating. Thus Nevena says: "It is excellent when you can choose from a large number of different ideas," and Tanja reports she likes group work "because many more ideas appear". Mislav similarly states that in collaborative translation "others will often have better ideas or they might just help you think of something you would not think of at that moment".

Another point that various subjects bring up is related to output monitoring. Thus Ivan says that he likes collaborative work because it "gives [one] the opportunity to get one's ideas double-checked before sending them out in print". Marija also says that it is "great to have someone with whom you can discuss things you're not sure about." Vlatka echoes their sentiments when she says: "When I translate alone I sometimes lack the final checkup when I'm trying to decide which among several options is the best. This is not the case in group translation." Marta makes a similar point, saying: "When we tried to decide which of the available options was the best translation, three minds instead of one worked wonders!" Her comments about L2 translation in particular seem to emphasize this advantage of team work:

> I'm happy about our brainstorming for the best solutions, and [having] three minds instead of one to check if the English sentence sounds "right". Since there were three of us, each noticed a different detail and I think we covered all of them, some of which a single person might have overseen much more easily.

The advantages of "brainstorming and negotiating" together are mentioned, in one way or another, by all the subjects. These two aspects of joint work are summed up nicely by Irena, who says she likes the way she and her team members "manage to 'complete' each other's thoughts and ideas, improving the translations on the way".

On the other hand, a number of disadvantages are mentioned as well. Tanja says that collaborative translation is much slower and "a bit more tiring". For Sanja, the hard

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part was "explaining to each other why a certain solution may not be as good as another". Tina admits that she can "concentrate much better on the text" when she works alone. For her, not being able to see the target text all the time (while she was not at the computer) presented a slight problem.

For collaborative work to be a successful experience, certain conditions have to be fulfilled, as can be deduced from the subjects' comments. All the team members being "open to different suggestions" would be among those desirable ingredients, as would "appreciating each other's opinions" or "listening to each other's ideas". Thus Vlatka says about her group's collaboration: "No one forced their own opinion, but we all gave our suggestions freely." Or, as Marta explains: "Every idea somebody had was discussed and either accepted or rejected but in such a way that everyone was happy with the one decided on in the end." Ivan adds to the list the "relaxed atmosphere" and "contribution by all team members." Nevena also emphasizes the "friendly and cooperative atmosphere" and Tina mentions the fact that "everyone did their share" of the work. Marta further describes group work as being "a lot of fun," and Sanja speaks about the "chemistry between the minds of the team members". Another thing Tina brings up is "compatibility" within the group. As she explains,

> I think we are compatible as a group because we have the same idea in our minds. At the same time, we are quite different as individuals and everyone can offer original suggestions which are compatible with the one idea we all share.

This last comment again seems to point to a joint "vision" of the target text, which a group must construct intersubjectively if the collaborative translation effort is to be a successful as well as pleasant experience.

7   Control experiments

It has been our assumption that collaborative translation and individual translation – as used in the learning context – have something in common, but also that they differ in certain respects. We thought it might be beneficial for the practical applications of the

findings from our main experiments, which used collaborative translation protocols, to compare the two modes of translation before making our final conclusions.

In our control experiments we therefore had an additional eight groups (of 3 members each) and 30 individuals translate the same two texts that were used in the main experiments. The control subjects were asked to accompany their translations with IPDRs (see section 2.3.6). They were also asked to fill out the same pre- and post-translation questionnaires as the "main" subjects. Their target texts were evaluated in the same way and according to the same criteria as the texts produced in the main experiments (see section 3.7.2). We also used choice network analysis (see 2.3.5) to create choice networks (or decision trees) based on the control subjects' translation products and the IPDRs.

Regarding the comparability of the main experiments and the control experiments, we must note the following: the data from the questionnaires and the data from the evaluation of the target texts are directly comparable, as they were obtained in the same way with the same instruments / according to the same criteria. Therefore, we can directly compare the data related to the main groups, the control groups and control individuals, and we do so in section 7.2.

On the other hand, the data from the collaborative translation protocols and the data from the IPDRs and choice networks are rather different from each other, and not directly comparable in all respects. We can compare the *problems* mentioned in the verbal protocols of the main groups, with those reported on in the IPDRs and gleaned from the CNAs, together with their selected solutions. The conclusions we can reach from this comparison are limited to saying that the groups and individuals on the whole encountered the same kinds of problems, and came up with very similar solutions (section 7.1 provides more details). The limitations of IPDRs and CNAs as research methods are discussed in section 7.3.

7.1   Individual and collaborative translation – what they have in common

In order to check whether similar problems appeared in individual and in collaborative translation, we created choice networks based on the translation products made by the groups and the individual translators. A "node" was added to the network at those points where the translations differed from each other in any segment or aspect of the text.

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These implicit "problems," and their possible solutions, were complemented by the ones the subjects explicitly mention in the IPDRs that accompanied their translations. An example of a choice network, presenting the second sentence of the Croatian source text (Text 2), can be seen in Figure 11.

We then compared the networks created in this way with the problems and solutions from the collaborative translation protocols of the four "main" groups. Figures 12-15 show the same network from Figure 11, with problems and solutions discussed by a particular group mapped onto this network. A star icon was used to show that a particular problem or solution was found in the protocols of a given group. A flower icon (two of which can be found in the case of this sentence, one in Figure 12 and the other in Figure 14) indicates that a particular solution was discussed by the group in question but not found in any of the control translations or reports.

Figure 16 shows the problems and solutions discussed by *all four* groups mapped onto the same initial choice network. The star and flower icons were used in the way described above. The green check mark that can be seen next to some solutions indicates that one or several of the groups discussed the same or similar problem elsewhere in the protocols (e.g. the decision of which tense to use in the whole text was made by some groups while they were working on their first sentence). Only those problems or solutions without any type of mark (star, flower or check mark) were not found in any of the collaborative protocols. We can see that there are very few such problems / solutions. We could hypothesize that if we had the verbal protocols of more groups – or indeed more individual translations – to work with, there would be an even higher degree of coincidence between the two sets of data.

> ST segment: Gospodarski razvoj i proces kristijanizacije (osobito intenzivan u IX. st.) glavni su cimbenici u procesu stvaranja hrvatske države. [Gloss: Economic development and the process of Christianization (particularly intense/intensive in the 9th century) are the main factors in the process of the creation of the Croatian state.]

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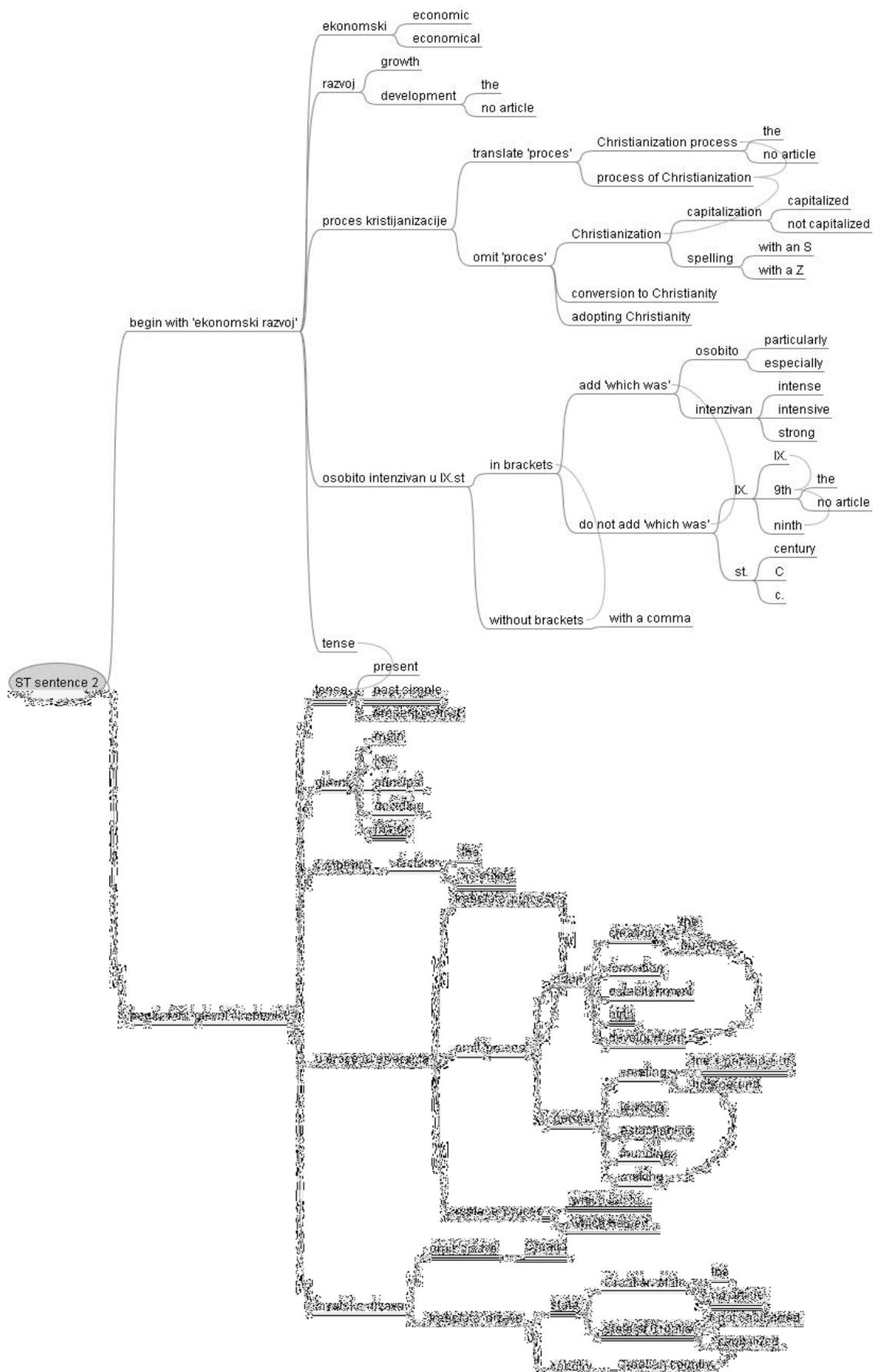
Figure 11 – CNA based on translations from the control experiments
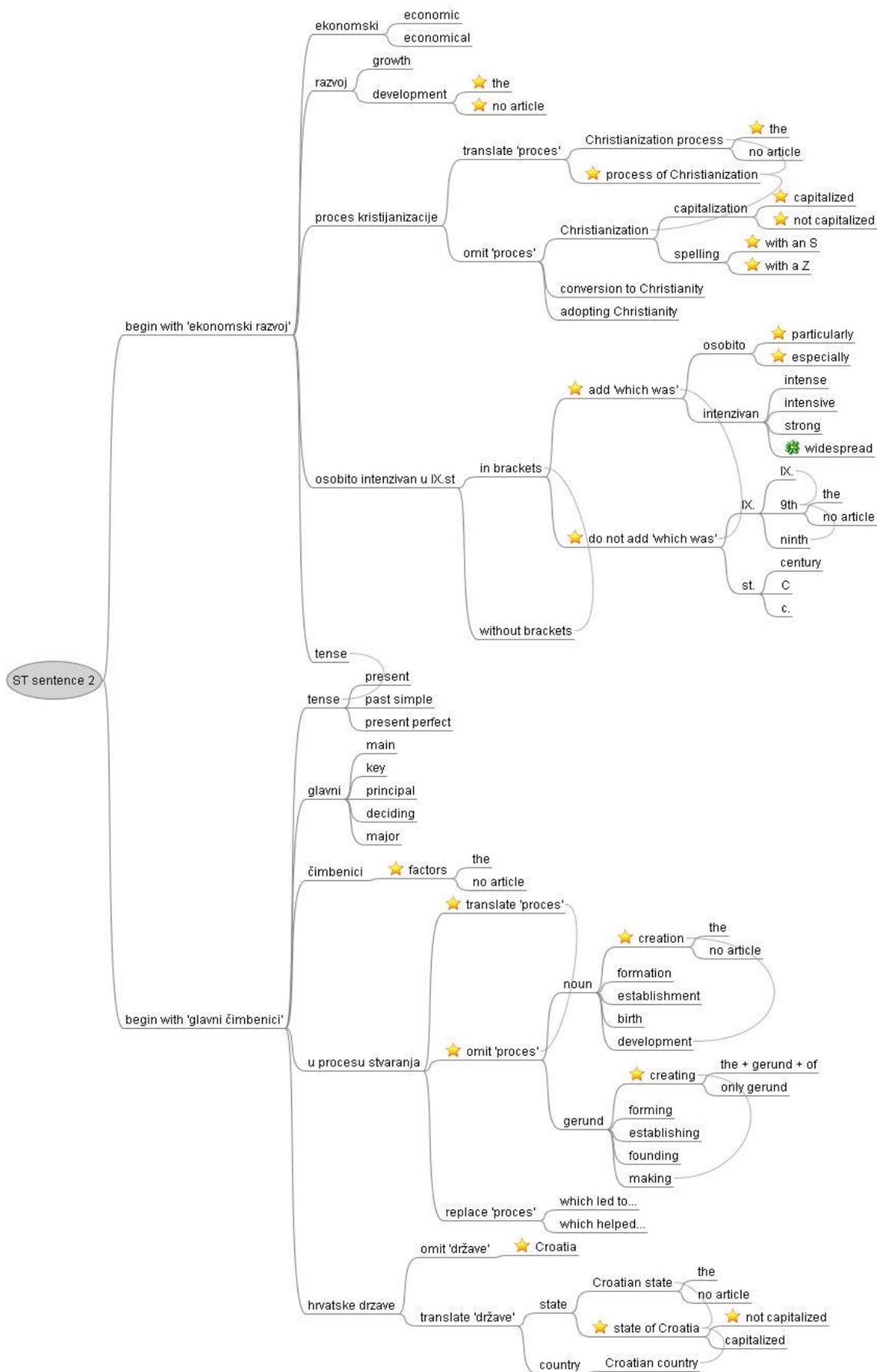
**Figure 12 – Group A choice network**
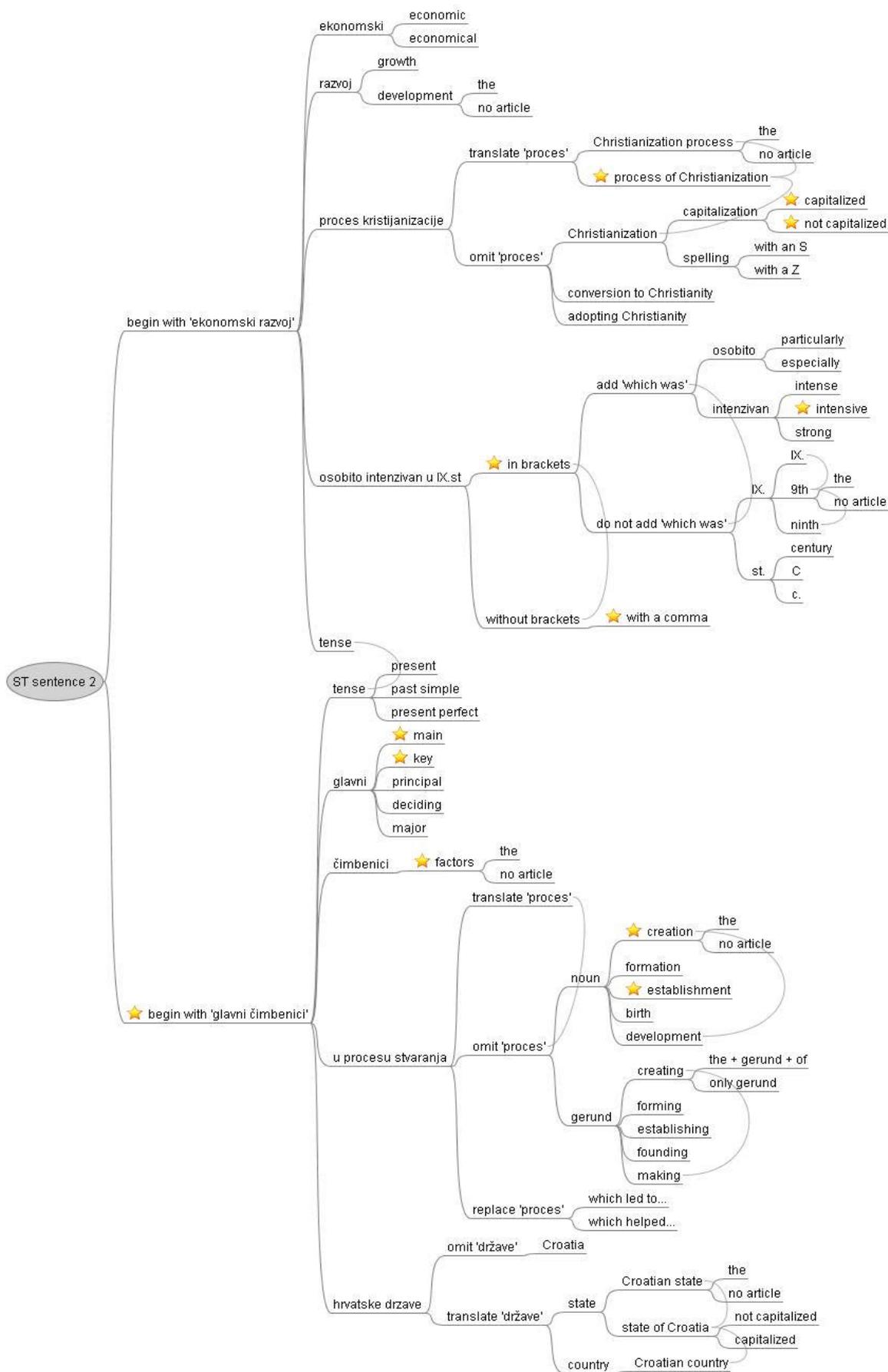
Figure 13 – Group B choice network
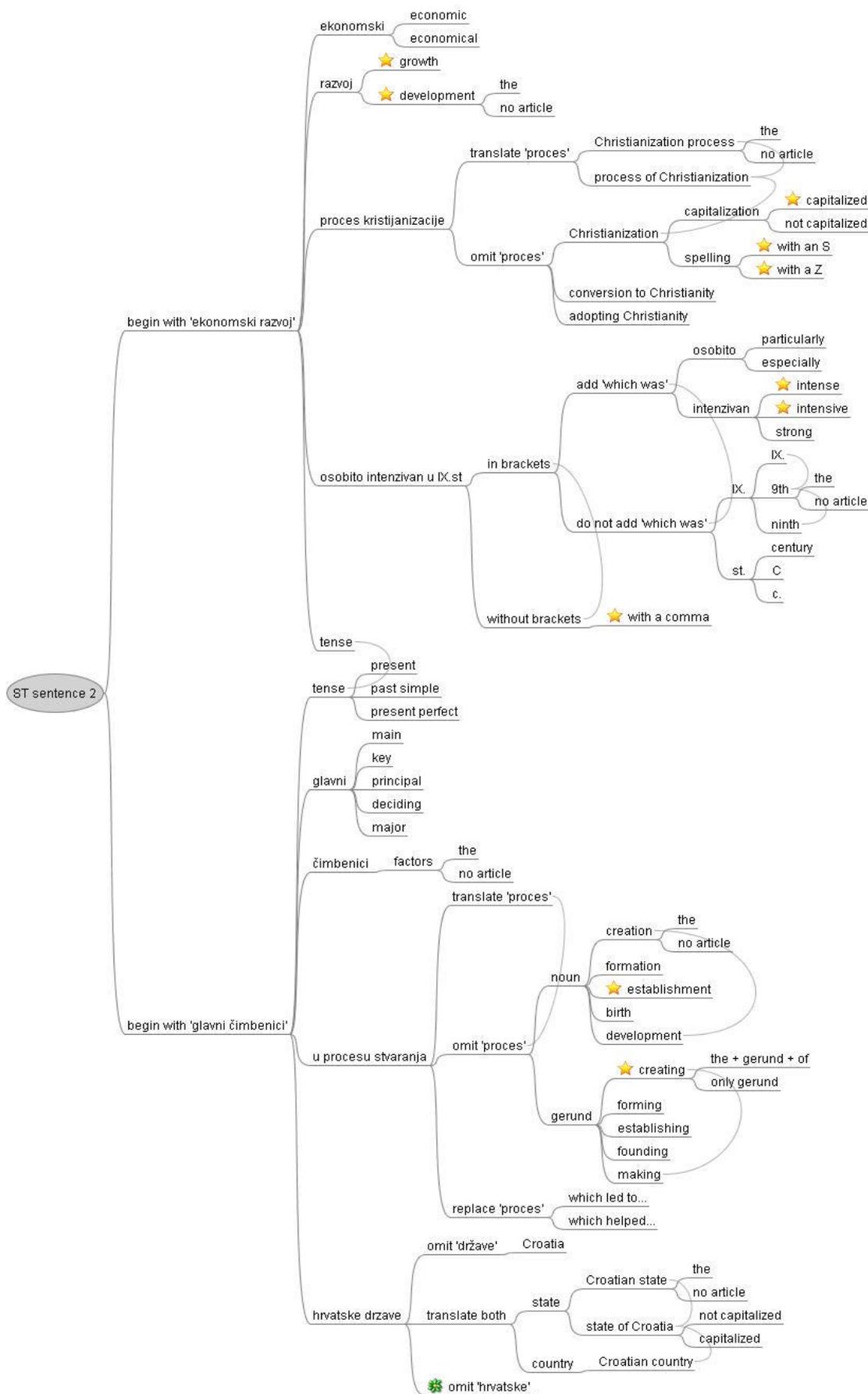
**Figure 14 – Group C choice network**

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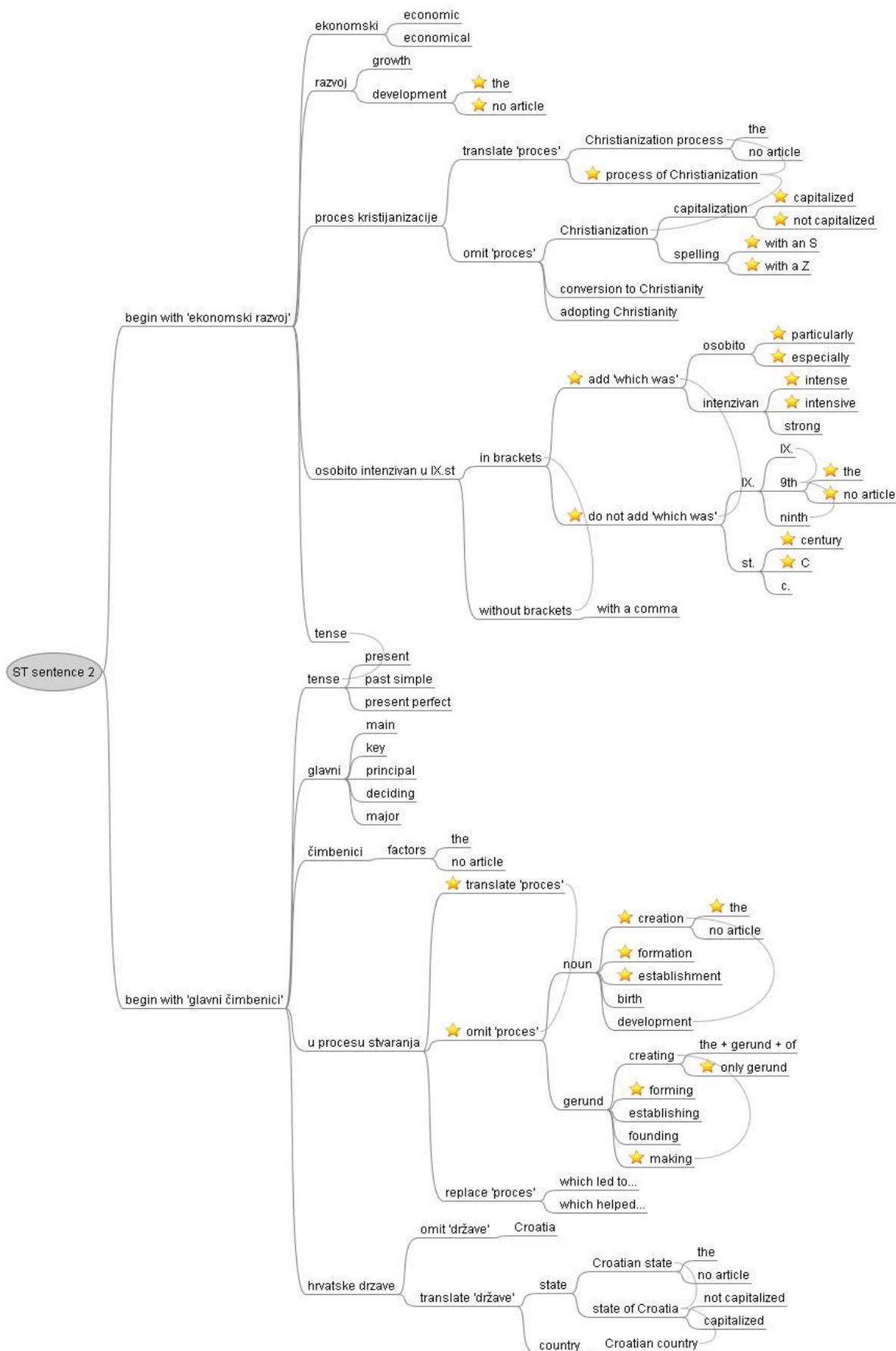
**Figure 15 – Group D choice network**

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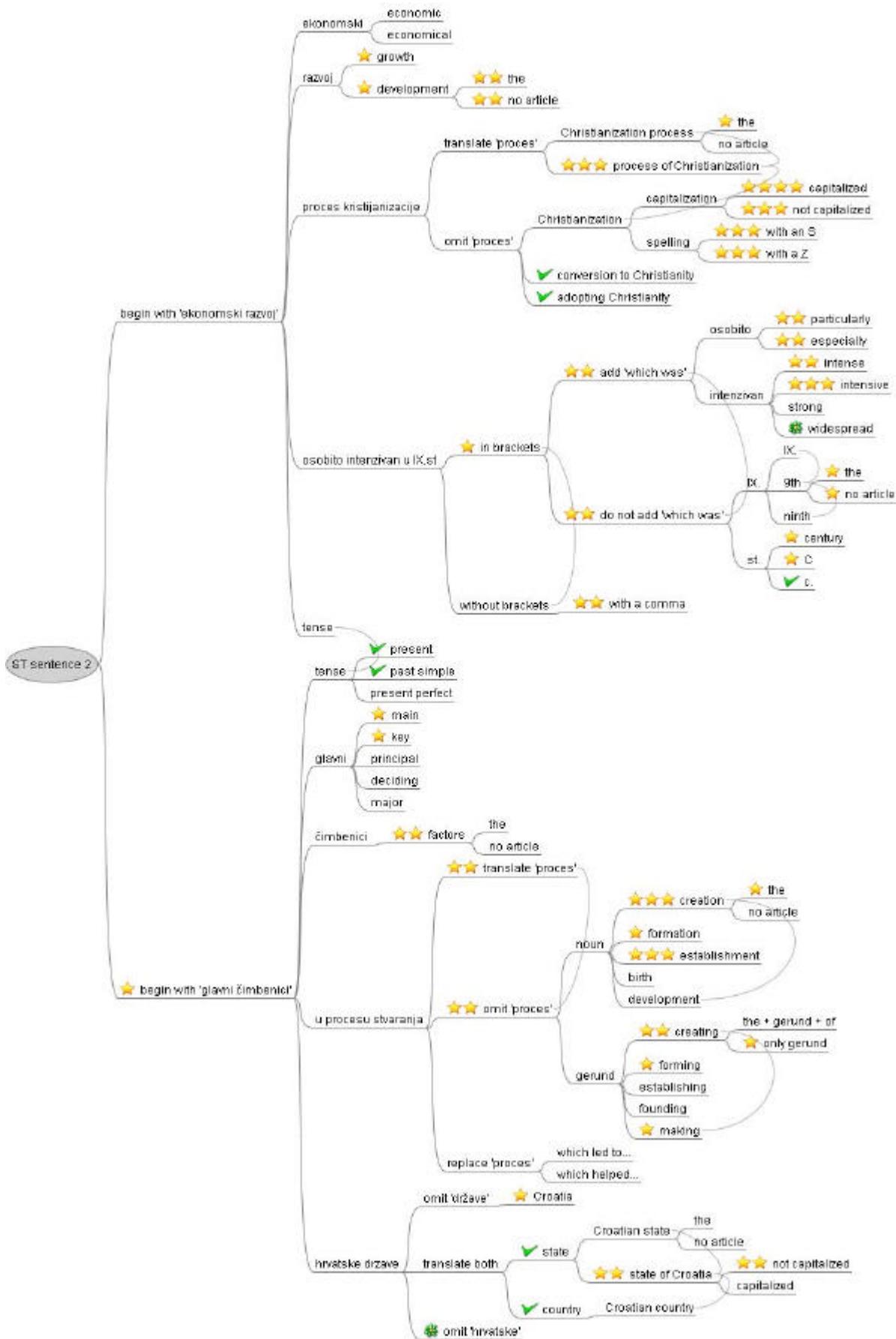
Figure 16 – Groups A, B, C and D choice network

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We also examined the IPDRs of individual subjects from the control experiments and compared the problems they report to the problems discussed by groups in the collaborative protocols. The problems listed in any one IPDR are in general far fewer than those that can be extracted from the verbal protocols (we discuss some of the reasons in section 2.3.5 and 7.3.2). However, all the problems that the groups encountered were found in one or another of the individual reports (even though of course no single report mentions them all).

We further compared the reports written by the groups who took part in the control experiments with the individual reports. Although, of course, no two reports – group or individual – are identical, there does not seem to be any observable pattern of difference between group reports and individual reports in terms of problems reported.

On the basis of these observations, we can conclude that there do not seem to be any observable differences between individual and collaborative translation as far as types of problems and solutions are considered. In the next section, we will look at some of the differences between these two modes of translation.

7.2   Individual and collaborative translation – how they may differ

7.2.1   Findings from target text evaluations

One of the measurable ways in which it is possible to directly compare collaborative and individual translation is by using the data obtained through the evaluation of their respective target texts (see 3.7.2 for details of evaluation procedure). In our control experiments, we had eight groups (24 subjects in all) and 30 individuals translate the same source texts that had been translated by the "main" four groups in our recorded translation sessions. The subjects from the control experiments worked at home and submitted their translations to the researcher, accompanied by IPDRs (see 3.6.3).

In Table 22, we present the data on the subjects' revisability scores, together with their number of red (see 4.7.1) and yellow cards (see 4.7.2) in each direction. Mean values are given for the main four groups, the control groups, and control individuals. The two right-hand side columns give the subjects' grades in the translation exam they

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took at the university prior to the experiments. The grades are, according to the Croatian grading system, from 1 ("Fail") to 5 ("Excellent"). Group averages are given in brackets, and the mean values for all groups / individuals are given in corresponding rows. The reason we present these exam grades is to provide an independent – albeit partial – indicator of the subjects' translation performance in the two directions. As can be seen from the table, the average grades of the subjects taking part in the main experiments were slightly higher in both directions than either those of the control groups (by 0.7 in L1 and 0.8 in L2) or of control individuals (by 0.3 and 0.4 respectively). The average grades of the control individuals are slightly higher than those of the control groups (by 0.4 in both directions). They are also marginally higher than the mean values for *all* groups, main and control (by 0.2 in L1 translation and by 0.1 in L2 translation).

The subjects taking part in the main experiments are therefore slightly above average in terms of their exam grades. They volunteered for the experiments, which means that their interest in translation might also be higher than that of the "average" student. The experimental situation as such might have motivated them to "try harder" than the control subjects who were not directly observed while they worked. All these reasons might have contributed to their getting better revisability scores than the control subjects (either groups or individuals). However, the groups in the control experiments were *not* made up of above-average students, if we are to judge by their exam grades. If anything, the mean values of their grades are lower than those of the control individuals. And yet, the control groups' mean values for revisability scores are all better than those of control individuals (9.3 compared to 13.3 in L1 translation, and 14.5 compared to 19.6 in L2 translation).

It is especially interesting to compare the figures for red and yellow cards. In L1 translation, the main groups had the mean value of 3 red cards, the control groups 5.8, and the control individuals as many as 9.5. A similar pattern can be observed in L2 translation, where the main groups had the mean value of 8.8, the control groups 12.1, and the control individuals 16.6. However – and this is where it gets interesting – the mean values for *yellow* cards do not differ that much between the groups and the individuals. In L1 translation the main groups had the mean value of 6.8, the control groups 7, and the control individuals 7.5. In L2 translation, the main groups even got *more* yellow cards (an average of 5.8) than did control groups (4.8), and only marginally less than the control individuals (6).

Table 22 – Revisability scores from main and control experiments

	L1			L2			exam grades	
	RC	*YC*	*score*	*RC*	*YC*	*score*	*L1*	*L2*
GROUP A	1	9	**5.5**	9	2	**10**	4, 5, 4.5 (4.5)	3, 4.5, 3.5 (3.7)
GROUP B	4	10	**9**	9	8	**13**	2, 2, 3.5 (2.5)	3, 4, 3.5 (3.5)
GROUP C	5	4	**7**	10	7	**13.5**	4, 4, 4 (4)	3.5, 2.5, 2 (2.7)
GROUP D	2	4	**4**	7	6	**10**	3, 5, 4.5 (4.2)	2, 4, 3.5 (3.2)
Main groups mean	**3**	**6.8**	**6.4**	**8.8**	**5.8**	**11.6**	**3.8**	**3.3**
Group E	5	7	8.5	7	3	8.5	4, 4, 4 (4)	4, 2.5, 3 (3.2)
Group F	7	9	11.5	21	6	24	4, 2.5, 2 (3)	1.5, 1, 3 (1.8)
Group G	4	8	8	9	4	11	3, 4, 1.5 (2.8)	3, 4, 2 (3)
Group H	10	8	14	9	4	11	1, 4, 2 (2.3)	1, 3, 1 (1.7)
Group I	4	6	7	8	4	10	4, 3, 4 (3.7)	3, 4, 3 (3.3)
Group J	7	5	9.5	21	7	24.5	4.5, 2.5, 3 (3.3)	3, 3, 3 (3)
Group K	5	6	8	10	3	11.5	3, 4, 3.5 (3.5)	3, 3, 3 (3)
Group L	4	7	7.5	12	7	15.5	1, 4, 1 (2)	1, 2, 1 (1.3)
Control groups mean	**5.8**	**7**	**9.3**	**12.1**	**4.8**	**14.5**	**3.1**	**2.5**
All groups mean	**4.8**	**6.9**	**8.3**	**11**	**5.1**	**13.5**	**3.3**	**2.8**
Individual 1	7	8	11	18	18	27	3.5	3.5
Individual 2	10	4	12	18	8	22	5	4.5
Individual 3	10	7	13.5	17	12	23	5	3
Individual 4	5	5	7.5	8	10	12	4.5	3.5
Individual 5	12	7	15.5	12	5	14.5	5	4
Individual 6	14	12	20	8	5	10.5	3	2
Individual 7	4	7	7.5	6	3	7.5	5	4
Individual 8	13	9	17.5	20	6	23	3.5	3
Individual 9	5	8	9	17	3	18.5	4	3
Individual 10	11	15	18.5	26	6	29	4	3
Individual 11	11	2	12	28	3	29.5	3	2
Individual 12	7	7	10.5	11	4	13	3	3.5
Individual 13	13	7	16.5	22	4	24	3	2.5
Individual 14	7	8	11	23	1	23.5	4	3
Individual 15	13	5	15.5	17	9	21.5	2	1
Individual 16	8	5	10.5	19	5	21.5	4	3
Individual 17	14	6	17	13	8	17	3.5	3.5
Individual 18	17	5	19.5	24	7	27.5	2	4.5
Individual 19	6	7	9.5	9	2	10	3	3
Individual 20	3	6	6	9	6	12	5	2
Individual 21	9	13	15.5	12	5	14.5	3	1
Individual 22	6	11	11.5	19	6	22	2	2
Individual 23	9	8	13	12	4	14	2.5	3
Individual 24	12	12	18	18	6	21	2	3
Individual 25	11	5	13.5	16	4	18	3.5	4.5
Individual 26	5	8	9	8	4	10	3	4
Individual 27	13	7	16.5	25	9	29.5	2	1
Individual 28	6	5	8.5	20	8	24	5	3
Individual 29	14	5	16.5	17	5	19.5	3	2
Individual 30	10	11	15.5	27	5	29.5	3	1
Individual mean	**9.5**	**7.5**	**13.3**	**16.6**	**6**	**19.6**	**3.5**	**2.9**

7.2.1.1 Discussion

Our data based on the evaluation of target texts produced in individual and collaborative translation show that there are individuals who did just as well as, or even better than some groups (e.g. Individuals 4, 7, 20, 26), and groups that did not do all that well (e.g. Groups F and J in L2 translation, Group H in L1 translation). However, the mean values indicate a tendency of groups to do better than individuals even when their individual grades are not higher than those of their peers. The expression that the group is only as strong as its weakest member does not seem to apply here. In fact, some groups seem to have done better than even their strongest members might have done on their own. This especially seems to be true when it comes to the number of red cards the evaluators gave their target texts. Collaborative work thus seems to involve tighter (more stringent) output monitoring, with each member noticing something the others might have otherwise missed (cf. subjects' comments on this in section 6.2.2.2).

7.2.2 Findings from the post-translation questionnaire (Q2)

Table 23 presents the comparative data from the post-translation questionnaires, giving the subjects' assessment of their satisfaction with the final translation products, how difficult they found the tasks and how much they enjoyed them, on the scale of 1 to 5 (five being the highest grade; see Appendix B for the actual questionnaire).

The main groups' enjoyment of the tasks seems to have been much greater than the control subjects', indicating again that the subjects who took part in the main experiments were people who like translation more than the "average" student. However, the control groups also seem to have enjoyed the tasks more than the individuals, in both directions of translation. All groups, main and control, were more satisfied with their final products than were individual subjects, also in both directions of translation. Interestingly, the control groups seem to have found the tasks more difficult than either the main groups or individuals. We could speculate that having to do collaborative translation *and* write the IPDRs might have been too tiring. Some of the control groups admitted in their reports that they did both tasks, L1 and L2, on the same day (which was not the case with the main groups).

Table 23 – Satisfaction, difficulty and task enjoyment – main and control experiments compared

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	L1 translation			L2 translation		
	product satisfaction	difficulty	enjoyment	product satisfaction	difficulty	enjoyment
Main groups mean	4.4	2.9	4.8	4.6	3	4.6
Control groups mean	4.2	3.3	3.9	3.8	3.5	3.3
Individuals mean	3.8	2.5	3.7	3.3	3.3	3.2

The post-translation questionnaires of almost all of the subjects who participated in the control collaborative tasks reveal that for them collaborative translation had an edge over individual translation. The reasons listed are similar to those given by the subjects who participated in the main experiments (see section 6.2.2.2). Thus one subject says: "I think it was fun. Maybe a little bit easier, because there were three of us, which means more ideas and suggestions than when you work alone." Or, in the words of one of her colleagues from another group: "Our discussions about how to translate some phrases were very constructive and I believe they led to better solutions than we would have come up with if we had translated on our own." This subject also sees the advantages of collaborative translation in terms of more tentative solutions and better choices as a result of group discussion:

> Translating in a group is very efficient because there are always more ideas and solutions than one can come up with when translating alone. Discussion can always result in good ideas and I believe the choices we made were often better than they would have been had we translated on our own. Ideas were discussed, analyzed, criticized and always led to good conclusions.

Another subject describes the group experience as faster, easier and less stressful:

> It was so fast and easy to do the texts in a group, and we also had quite a good laugh which is why the whole work didn't feel as stressful as it could have. We organized ourselves easily and totally spontaneously; one person was typing, the others [worked with] dictionaries, and we swapped around.

As we mentioned in section 6.2.2.2, for the collaborative work to go well, the relations among group members and the working atmosphere have to be good, as this subject explains:

> We were all very cooperative, open to all suggestions, and no one was trying to impose their opinion. The atmosphere was also very relaxed, we laughed a lot, but we also took the assignment seriously. No one was slacking.

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Here are some more opinions on collaborative work:

> Each person is sometimes positive that their translation would be better and if the other two disagree, it is not included in the final version. However, I don't really think that this is a big problem because there are more people in the group and it is easier to decide which translation is better and why.

> The creative, fun and cooperative atmosphere during our work was not interrupted with positive conflicts about different versions and suggestions for translation answers, we did enough brainstorming, research and consulting with other resources. I find this type of working fun, creative and prefer it over doing it solo.

> I was completely satisfied, although usually I do not like group work. It all depends on the people in the group. This time both of my colleagues were very cooperative; and they are good students and have a very good knowledge of English. I think each of us contributed equally. It is really important that people agree to work together and that they are all, more or less, at the same level of knowledge and willing to take each other's suggestions. Translating in groups is terrible if one or more members is bad in grammar or orthography or refuses to cooperate.

That things can go wrong in a collaborative working environment is evident from this subject's description:

> We just couldn't get along. When one of us suggested something, the others dismissed her answer immediately and suggested theirs. Every one of us thought that her suggestion was the best. I felt like the entire work was about who would [be right]. That's why it lasted so long. At the beginning we took an hour for the first couple of sentences.

This group (marked "F" in Table 21) did not get a very good evaluation of their final product, especially their L2 translation, perhaps because of the conflicting relations during the tasks. This was the only group that reported negatively on their collaborative experience, even though they had regularly worked as a team in class.

In sum, we can conclude that while the subjects in both individual and collaborative translation faced similar problems, the collaborative learning environment allowed for a larger number of tentative solutions to be proposed and weighed against each other. Not only did each subject contribute by proposing their own solution, but the process of "thinking together" seemed to have enabled each one of them to come up

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with "more" and "better" ideas than they would have if they had translated on their own. Having more solutions to choose from, coupled with tighter output monitoring, seems to have contributed to higher quality of the final product in collaborative translation tasks.

7.3 Some observations about the research methods used in the control experiments

Choice networks and IPDRs used in our control experiments were very helpful tools by means of which we were able to examine some features that individual and collaborative translation processes have in common. In the course of our experiments we also made some observations about the limitations of these two methods that we would like to briefly present in the next two sections.

7.3.1 Choice network analysis – limitations of the research method

Two things are worth pointing out in connection with choice networks as a method of research on translation processes. First, as also stressed by Campbell (2000: 31-32), their neat appearance evokes a model of "serial processing," i.e. a model of decision-making that involves sequential steps. The collaborative protocols, however, show that, while the subjects indeed progress in a more-or-less linear fashion from the beginning of the source text to its end, this progression is not as ordered or organized as the networks would suggest. The networks are rather a *post festum* reconstruction of what might have gone on if the human brain was a sophisticated computer program. It is highly doubtful that any human translation process – group or individual – would have ever followed the decision-making steps shown in Figure 11 in such a disciplined, orderly way. Human translation processes are by all indication messier, perhaps more resembling this segment from Group C's protocol (the subjects are working on the same ST sentence as was presented in Figure 11):

ST segment: Gospodarski razvoj i proces kristijanizacije (osobito intenzivan u IX. st.) glavni su cimbenici u procesu stvaranja hrvatske države. [Gloss: Economic development and the process of Christianization (particularly intense/intensive in the 9th century) are the main factors in the process of the creation of the Croatian state.]

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I: *the economic development and the process of Christianization, which was...*

M [overlapping]: *especially*

I: [overlapping] *...especially intensive in the 9th century*

S: *intense*. It's not *intensive. intensive care.*

I: All right

S: That's what I always get wrong.

M: Right, we'll check that later.

I: *...were the main factors in the process of... creating*

M: *in the process...*

S: Again **hrvatska država** [Croatian state]! [groans]

I: *of...*

I & S: *creating the state*

M [overlapping]: *the state*

S: *Yes. Cut it*. [looks at the ST] *The economic... development*

I: *and the process of Christianization*

S [typing]: *The economic...* can you just check this *economic development*? I'm thinking *growth*,

but that's different, that's **rast** [growth], an economic term.

M: No, this is **razvoj** [development]

I: **razvoj**, **razvoj**

S: Is it? The collocation is ok? All right. *The economic development and* [glances at the ST] *the*

process of... Is this lowercase? *Christianisation*. It's...

M: I think so

I: Yes

S: Right.

I [looking in "OALD"]: I'll check.

M [looking for a dictionary]: Let me see about **intenzivan**

S [typing]: *c-h-r-i-s-t-i-a-n-i...*

M [looking at BBI]: *Dictionary of Word Combinations.*

S: Is *christianisation* with an s or a z?

I: I'm searching, I'm searching... e, f, g, h... *Christen, Christendom, Christian, Christianity,*

Christening...

S: Does it have it at all? [looks around while I. is looking in "OALD" and M. in BBI] I didn't

notice there was a balcony here.

I: Is that a balcony? I thought it was a window.

M: It really is

S: It's cute. It's narrow, like mine

M: I found *economic development*

S: Great

M: This is cool, I've never seen it before. *Dictionary of English Word Combinations*

S: They must have it in Algoritam [book store].

M: I'm sure they do

S: And it must cost...

M: Nah... it's not that expensive

I [overlapping]: No... There is a 10-percent discount for students.

S: Is there?

I [looking in "OALD"]: There's no *christianization* here.

S [looking at the TT on the screen]: I didn't put a double space.

M: You can do it later... Select all and...

S: I was wondering why it looked strange...

M: What did we say we were looking for? **intenzivan**?

S: No, *christianization*, whether it's with an s or a z.

I: This one only has...

M: With a z. c-h-r-i-s-t-i-a-n-i-z-a-t-i-o-n

S [nodding]: Yes

M: It's with a z, I know. I have used it a thousand times in the literary seminar this year

I [laughs]

S: So, are we going to put a comma, as in a relative clause, and then another comma... *which was especially...* Shall we do it like that?

I & M: Um-h m

S [typing]: *which was... especially*

I [overlapping]: *especially intense*

S: Have you checked this *intense*?

M: No.

M [looks in "Bujas"]

I [looks in "OALD"]

M [looking in "Bujas"]: **intenzivan**: *intensive, high-energy*

S: Yes, but... Pass me the Collocations [Dictionary]. They both exist, but it depends with what [they go]. That's the catch.

I [reading from "OALD"]: *intense* is *very great or severe*

S: Yes

I [reading from "OALD"]: *extreme, very strong, serious and concentrated, feeling strongly or deeply about something...*

S: That's it, then

M: That's it

I [reading from "OALD"]: And *intensive... concentrating all one's effort on a specific area*

S: I think it's the former

I: *intense*

M: *intense*

S: I'm sure. [gives "Ox Coll" back to M.] Thank you. [typing] *especially intense*

I & M: *in the 9th century*

I: So is *christianization* lowercase or uppercase?

S & M: Lowercase

S: Why should it be uppercase?

S: What comes next?

I: comma, *were the main factors in the process of creating the state*

M [overlapping]: *of creating the state*

S [typing] *the main factors... in the process*

I: *of creating... the state*

S [looking at the TT on the screen]: *create the state...* Maybe we should have looked that up

M: **stvaranje**?

S: In case it's *establishment* or something. I mean, because of the collocation. I have never used "*to create a state*".

M: Yes

I [takes the "Oxford Collocations" dictionary]

S: I know that [unclear]

M: No, you're not. We have translated **stvaranje** directly

S: Yes

M: which in principle...

S: Perhaps it's fine, you know, but...

M: Yes

I [looking in "Oxford Collocations"]: Wait, *state...*

M: I think it can be used, I think that *creating the state...*

S: Me, too

I [looking in "Oxford Collocations"]: Um...

S: I think it's fine

M: Me, too

S: But since we're at it...

I [looking in "Oxford Collocations"]: It's either not in here, or I'm...

M [looks in "Bujas"]

S: That's worrying, if it's not there

I [looking in "Oxford Collocations"]: It has the *adjectives* that go with *state*, it has *state plus noun*, and it has *phrases*.

S: But, as she [M.] said, I think it exists. I'm pretty sure.

M: I think so, too.

S: Let's leave it, then. We can look it up later on the Internet or something...

M: Ok

S: ...if there's enough time left. Wait till I save this. Right.

Secondly, choice networks show only the various possible results of the decision-making processes, without the reasons why some solutions made it to the final versions

of certain translations and others did not. Unless the target texts on which the choice networks are based are accompanied by written or verbal reports, we can only identify the possible trouble spots based on the differences among the various translations, and get a glimpse of the many possible solutions for resolving those "problems," but we cannot know anything about why one group or individual decided to choose one solution over another. We cannot know whether the solutions arrived at were produced spontaneously or found (confirmed, etc.) in external resources. We cannot know how many other solutions each translator considered before opting for the one we find in the final version of the translation. We do not have an insight into the actions or interactions that might have been taken as a response to the problematic points in the text.

In the context of research on translation processes, in particular the research that aims to be applied in the area of translator education, these limitations seem to present a distinct disadvantage. Understanding what types of problems translators face at particular levels of competence, in particular language pairs or types of texts is certainly very useful. But to understand how and why certain decisions are made we need the additional help of other research methods.

7.3.2 IPDR – limitations of the research method

Unlike CNA, which is only based on translation products, IPDRs offer some insight into the processes that led to those products. However, as we already mentioned in 2.3.5, the data collected by means of written reports are not as detailed as those gathered from verbal protocols. It is impossible to know whether a subject was unaware of a problem, or whether they merely failed to report it. The reasons for failing to report a problem could be many. The subjects can do the reports either as they are translating, or after the translation. In the latter case, it is not likely that they will recall all the problems they encountered, solutions they considered, resources they consulted, or the reasons for their final decisions. Even if they write the reports as they go, they may not consider all the problems / solutions to be important enough to merit reporting. Writing the reports also makes the translation process longer than it would normally be, and more tiring. It is likely that the subjects will tend to skip some comments in order to finish the task sooner.

Furthermore, since the reports are introspective, the researcher cannot be sure that the subjects are reporting 100 percent truthfully on what they did during the translation

processes. In our study we found examples of commendable honesty (even if the translation procedure described is not so commendable) such as this one: "I had difficulties with translating Croatian proper nouns, names and culturally specific items, which I didn't really feel like searching for on the web, so I simply guessed them." It is unlikely that the researcher could expect such frankness from all the subjects participating in a study.

Finally, if the reports are written during the translation processes rather than afterwards, we may wonder if they are interfering with those processes in ways other than merely to slow them down (see 2.3.5; cf. the discussion on TAP in 2.3.1). In sum, IPDRs can be expected to be incomplete and perhaps "doctored," and also to interfere with the translation processes they are aimed at investigating. It is true that the same could also be said of verbal reports, but in the case of written reports these particular drawbacks seem to be even more pronounced.

The limitations of CNA and IPDR discussed above should by no means be understood to invalidate these research methods. They do, however, suggest that each of the methods will be used most profitably in combination with other means of data collection available to the researcher.

When it comes to the usefulness of these two methods in the educational context, we would tend to conclude that the IPDR might be the more useful tool for keeping track of the students' translation processes and the development of their skills. However, we envisage the possible application of CNA in the development of translator e-learning tools, which we are hoping to focus on more in our future research.

8   Summary of the findings, conclusions and possible implications for translation training

The aim of this research has been to compare L1 and L2 translation processes in the educational context, with a view to making recommendations for the improvement of translation training, particularly in settings that use a language of limited diffusion and in which L2 translation is a regular practice. To that end, we examined certain features

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of translation processes carried out by novice translators in the two directions of translation that we expected to differ according to direction. Since we have used collaborative translation in our own translation classes at university level, we decided to use this method to study translation processes in the educational context. It seemed appropriate to also compare collaborative and individual translation in order to test the merits of one mode of translating against the other, along similar parameters that were used to compare L1 and L2 translation.

In this dissertation, we first discussed the work already done in the area of directionality and of translation processes, together with the main challenges regarding research methodology. After that, we defined, classified and exemplified the key concepts, and elaborated our research design and methodology. Finally, we presented and discussed our findings based on the data obtained through the experiments. In this chapter we summarize the findings and formulate some conclusions based on those findings. The limitations of the conclusions are also stated. Suggestions for possible application of the findings are made, and avenues for future research outlined.

8.1   L1 and L2 translation compared – summary of the findings

▪ Finding 1: In L1 and L2 translation of non-domain specific texts of comparable difficulty, novice translators were found to encounter similar numbers and types of problems in both directions of translation.

Regarding the number and type of problems, as defined and categorized in this study, no substantial difference was found between L1 and L2 translation, at least as far as this type of text and the subjects' level of competence is concerned. For other text types, domains, subjects' level of competence and/or language pairs, the situation may well be different.

▪ Finding 2: In translation processes involving novice translators working on comparable non-domain specific source texts, fluency was found to be greater in L1 translation than in L2 translation.

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Fluency, as defined and operationalized in this research, was found to be higher in L1 than in L2 translation. This seems to be an important finding of our study, and one of the major differences we found between L1 and L2 translation processes involving novices. It might be hypothesized that the difference between L1 and L2 in this respect is less prominent at higher levels of L2 competence and L2 translation experience, and more prominent at lower levels of L2 competence and L2 translation experience. Text types and domains might also play a role.

- Finding 3: In translation processes involving comparable non-domain specific source texts, novice translators were found to rely more on internal resources in L1 translation than in L2 translation.

Closely related to fluency is the translators' reliance on internal resources, which we found to be greater in L1 than in L2 translation. As is the case with fluency, the proportion between the use of external vs. internal resources might also be related to the level of L2 competence and experience in L2 translation. To some extent, it may also be related to the situation regarding available external resources when it comes to particular language pairs, especially those involving asymmetrical diffusion. As a number of subjects in our study mention in the verbal and written reports, as well as in the questionnaires, there is a lot more material available on the Internet in English than there is in Croatian. English printed dictionaries, especially monolingual dictionaries and dictionaries of collocations, are also more numerous and of better quality. It is likely that the situation is similar with other languages of limited diffusion when compared to major languages.

- Finding 4: In translation processes involving comparable non-domain specific texts, novice translators were found to create products of better quality in their L1 translation tasks than in their L2 translation tasks.

The quality of the final products was found, perhaps unsurprisingly, to be better in L1 translation than in L2 translation, both in the main and in the control experiments. The difference was especially prominent in the number of "red cards," or unpublishable elements, which found their way to the final versions of the translations. L1 translation thus seems to involve tighter (more stringent) output monitoring than L2 translation, at

least at this level of the subjects' L2 competence and L2 translation experience. The L2 products also contained more revisable elements that the subjects had not verbalized as a problem, suggesting that the degree of "unconscious incompetence" might be higher in L2 translation. It could be hypothesized, based on our experience in the professional translation market, that translators more experienced in L2 translation and with higher L2 competence can produce L2 translations that approach L1 products in terms of quality. This issue is also likely to be related to text types, domains, the translators' familiarity with particular text types and domains, as well as specific language pairs. The external evaluation based on the idea of revisability that was used in this study, although it offers a workable, easily comparable measuring system, could also be subject to criticism. Other evaluation methods should perhaps be combined to arrive at more solid conclusions.

- Finding 5: In translation processes involving novice translators working on comparable non-domain specific source texts, output monitoring was found to be tighter in L1 translation than in L2 translation tasks.

The finding that further corroborates the claim of tighter output monitoring in L1 translation is the higher "optimization quotient" in L1 translation. This indicator, which is also based on the data from the collaborative protocols, signals that the subjects tended to choose later solutions for their final product. This is closely related to the subjects' verbalizations about the tentative solutions that are proposed for particular translation problems. The subjects were found to spend more time discussing the various tentative solutions in their L1 tasks and, judging by these verbalizations, they seemed to have much stricter criteria for monitoring the suitability of particular tentative solutions in this direction of translation. In both directions, but far more prominently in L1 translation, the solutions that were deemed to "mean" something other than what is "needed" in a particular situation were rejected, as were those that did not conform to the subjects' past experience with the target language (something is not "said that way"). In other words, output monitoring was found to function at two levels (cf. Reiss and Vermeer's "intertextual coherence" and "intratextual coherence" in 1984: 109-113). The verbalizations of this kind were more numerous in L1 translation, suggesting tighter output monitoring in this direction of translation.

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- ▪ Finding 6: In translation processes involving novice translators working on comparable non-domain specific source texts, construction of ST meaning was found to play an important role in both directions of translation.

Verbalizations focusing on the interpretation of the source-text meaning (what the source text "says," what the author "wanted to say") were found to be more numerous in L1 translation, but only marginally so and not for all the four groups. Construction of the source-text meaning was an important part of the protocols of all four groups in L2 translation as well (where the source was an L1 text). This finding – which may not prove to be typical of all language pairs, text types or domains, and all levels of L2 competence – would seem to challenge the traditional axiom about the difficulty of "ST comprehension" being associated with L1 translation only. In this respect, our study seems to confirm what Beeby Lonsdale (1996: 50 and *passim*) observes: "Problems of meaning [in L2 translation] are just as likely to arise from misunderstanding the SLT [source language text] as from insufficient competence in the TL [target language]." Research involving other methods, such as those aimed at measuring the cognitive load in processing comparable source texts in the two directions of translation should shed more light on this issue (cf. Jensen and Pavlovic, forthcoming).

- ▪ Finding 7: In translation processes involving comparable non-domain specific source texts, novice translators were found to favor a particular combination of actions/interactions characteristic of their style of working, regardless of direction of translation.

As far as actions/interactions are concerned – that is, everything that the subjects did in the course of their translation processes in order to transform the source text into a target text according to the assignment – we found no major difference in terms of directionality. The actions/interactions rather seemed to differ according to group profiles, or styles of working characteristic of a particular group of translators. Each of the four groups in our study had their own particular blend of actions/interactions that they employed – strategically or routinely – to complete the tasks. The groups that made most use of postponement (Groups A and D) produced better translations than the other two groups, which is in line with what has already been observed in research on

translation processes (see e.g. Tirkkonen-Condit 1997: 79). However, our sample is small, which makes formulation of any kind of conclusion in this respect hazardous.

8.2 Collaborative and individual translation compared – summary of the findings

Even though comparison between individual and collaborative translation was not the central aim of this study, our use of collaborative translation both as a teaching and research method has motivated us to conduct control experiments aimed at comparing the two modes along certain parameters. Here we summarize the findings in that respect.

- Finding 8: Novice translators working collaboratively on non-domain specific source texts were found to encounter similar problems to comparable novice translators working individually on the same texts.

We found, based on the choice network analysis of the target texts and IPDRs, that there were no observable differences in the types of problems encountered by groups and individuals in the translation of the same texts.

- Finding 9: In translation processes involving comparable novice translators working on the same non-domain specific source texts, fluency was found to be greater in collaborative than in individual translation.

Judging by the subjects' observations made in the questionnaires, collaborative work seems to be characterized by higher fluency – more "ideas" are put on the table for discussion. There may be reason to believe that these ideas are more numerous not only because there are more people proposing them, but also because collaborative environment is conducive to greater fluency and creativity in *each* subject. In other words, joint discussion could "inspire" particular translators to think of solutions they may not have thought of on their own, as some of our subjects pointed out in the questionnaire. As Kussmaul (1995: 52) says, "it may be argued that fluency and

flexibility are a result of teamwork. […] Undoubtedly, a stimulus from outside can be very helpful for both fluency and flexibility."

- Finding 10: In translation processes involving the same non-domain specific source texts, comparable novice translators were found to rely more on internal resources in collaborative translation than they did in individual translation.

It is perhaps unsurprising that reliance on internal resources was found to be greater in collaborative translation, as the subjects rely not only on their own, but also on each other's internal resources. Only after no subject could offer a spontaneous solution did the groups resort to consulting external resources. Output monitoring – and not only the search for solutions – was aided by external resources only in those cases where the group's internal resources failed to offer sufficient assurances that a particular solution was indeed suitable.

- Finding 11: In translation processes involving the same non-domain specific texts, comparable novice translators were found, on average, to create products of better quality in collaborative tasks than in individual tasks.

The quality of the final product was found to be higher, on average, in collaborative translation. The difference was found to be especially pronounced in the number of "red cards."

- Finding 12: In translation processes involving comparable novice translators working on the same non-domain specific source texts, output monitoring was found to be tighter in collaborative than in individual translation tasks.

In this study, output monitoring was gauged by means of various types of data. For one thing, the subjects' verbalizations concerning the tentative translation solutions were examined, and for another, the "optimization quotient" was taken as an indicator of the stringency of monitoring criteria. The number of "red cards" was also looked at in connection with output monitoring, as were the subjects' comments in the post-translation questionnaires.

When it comes to our comparison between collaborative and individual translation, we could not make use of the former two kinds of data (the verbalizations and the optimization quotient), since they were only available from the collaborative verbal protocols. However, the number of "red cards" and the subjects' comments from the questionnaires were available for both individual and collaborative translation. Both of these sets of data indicate that indeed output monitoring is tighter in collaborative translation than in individual.

8.3   Conclusions and implications for translation training

Based on the above findings, we could formulate the following main conclusion of our study:

- Conclusion A: Novice translators working on comparable non-domain specific source texts tend to encounter similar problems, and respond to them with a similar blend of actions/interactions, regardless of direction of translation. However, in L1 translation they tend to rely on internal resources more, their production of tentative translation solutions tends to be more fluent and their output monitoring tighter than in L2 translation. The final quality of their translation product also tends to be higher in L1 translation.

Some of the variables that could be changed to make the conclusion more generalizable include the following: text type / domain / genre; the subjects' familiarity with the said text type; the subjects' L2 competence level; the subjects' L2 translation experience; language pairs; time restriction; external resources.

More research is obviously needed with respect to collaborative vs. individual translation to corroborate the findings outlined above. Different variables, including those related to group dynamics, and more sophisticated independent measurements of particular subjects' competences need to be considered. For now, we can formulate the following tentative conclusion based on our findings:

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- ▪ Conclusion B: Novice translators working collaboratively on non-domain specific source texts tend to encounter similar problems as their peers working on the same texts individually. However, the novice translators working collaboratively are likely to produce better target texts than those working individually, perhaps because in collaborative translation the generation of tentative translation solutions tends to be more fluent and the output monitoring tighter.

As we can see from the previous sections, our findings suggest that L1 translation as opposed to L2 translation, and collaborative translation as opposed to individual, seem to have a lot in common. In L1 translation tasks as well as in collaborative tasks, the subjects produced better quality products than in the other direction / mode. In both cases, this quality seems to correlate with greater fluency and more stringent output monitoring. On the other hand, L2 translation seems to share the same weaknesses with individual translation: fewer tentative solutions to choose from and laxer output monitoring.

If our conclusions are correct, the strong points of collaboration might be profitably used to compensate for the weak points of L2 translation in the training of future L2 translators. What L2 translation seems to need in order to approach L1 translation in terms of target text quality is – simply put – more solutions to choose from, and more a sophisticated system of monitoring (assessing) those solutions. Collaborative translation offers both these advantages, and might therefore be particularly suited for acquiring competence (as defined in this work) in L2 translation.

It is perhaps important to stress that we are not talking here about the kind of collaboration in which an L1 user of the target language and an L1 user of the source language sit down together and translate a text, or even about an L1 reviser editing a text produced by an L2 translator. Both of these types of collaboration are tried and tested responses to the challenges of L2 translation. However, in settings involving a language of limited diffusion, there are typically not enough L1 users (either translators or revisers) of major languages to go round. This is true in professional practice, as well as in educational settings. It is not only a matter of such users not being physically present in particular countries, which could easily be remedied by means of modern IT. It is more a matter of such users not being interested in learning the small language in question, or learning it well enough to be able to take an active part in professional translation assignments or in translator education.

The kind of collaboration we have in mind here refers to group tasks involving only L2 translators helping each other to overcome the weaknesses that seem to be part and parcel of L2 translation at the level of competence that was studied in this research project. Obviously, what we have in mind is primarily collaborative translation in the context of higher education. In professional practice, even though such collaboration happens from time to time, translators are not likely to sit down and work on the same translation as the subjects of this study did. However, we would like to argue that training involving this kind of collaborative translation may provide good preparation for individual translation that will take place later in the course of the novice translators' professional careers. It is our belief that translators who have been taught to "think with others" – with everything that this collaborative thinking implies, as we have seen in this study – will internalize the skills that they acquired in this way.

Translation competence has been defined as the ability to generate viable target texts for a pertinent source text and to select one of these viable target texts "quickly and with justified confidence" (Pym 1992: 175). The findings of this study indicate that – at least in the educational context – having more solutions to choose from, and being more "selective" when it comes to those solutions correlates with higher quality of the output. It could be argued that considering too many solutions or being too finicky contradicts the "quickly" part of the above translation competence definition and spells inefficiency, especially in the professional world. We would like to suggest, however, that in the learning environment having a lot of ideas and thinking (aloud) critically about them can only be an asset. Speed and confidence should follow suit.

Staying with the issues of efficiency and confidence, the subjects in this study were found to rely more on external resources in L2 translation than in L1 translation. This finding confirms what teachers of translation intuitively know, and that is the importance of research and documentation skills for L2 translation students. The verbal protocols have revealed a lot of inefficiency in the subjects' use of external aids, but also great resourcefulness. It was especially interesting to see the students show one another how certain electronic tools could be used more profitably. This is another aspect of collaborative learning that could be taken advantage of.

It has been suggested (Lorenzo 1999 and 2002; Kiraly 2000b: 116) that translators may feel less confidence in L2 translation than they do in the other direction. Having a wealth of external resources at their disposal and being able to use them well is likely to help the students deal with this insecurity. In addition to this, a supportive

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group of peers who are open to suggestions and respect each other's opinion, and who are at the same time critical and ready to voice their disagreement, can also go a long way towards boosting L2 translation students' self-confidence. Last but not the least important, a collaborative learning environment can make the translation experience more enjoyable – in either direction.

8.4   Possible avenues for further research

Given the small, non-random samples in our study, the conclusions we reached on the basis on our data cannot be generalized without further studies. It is our belief, however, that they can nevertheless be useful for future research on directionality, collaborative translation, and – more generally – translation processes. There are many possible ways in which the present study could be replicated, the most obvious of which would be to alter the variables in the following ways:

- Use different text types / domains / genres;
- Use subjects at different levels of L2 competence and/or L2 translation experience;
- Use a different language pair;
- Restrict the time for the experiments;
- Restrict the use of external resources;
- Use a different evaluation method;
- Use individual think-aloud protocols instead of collaborative translation protocols;
- Use (a combination of) other research methods.

It would be interesting to see more work done to explore the relationship between creativity and what we have termed fluency quotient, or between the notion of risk in translation and our optimization quotient. We also hope that our classifications, especially of actions/interactions and of verbalizations, will facilitate future research on translation processes, whether collaborative or individual. We believe that the evaluation system used in this study offers workable, real-life criteria for the assessment

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of translation products used in research on translation processes without pretending to be an "objective" measure of translation quality.

Above all, it is our hope that this study will motivate researchers working in the areas of directionality and collaborative translation to devise other creative ways to study these interesting and important issues, and that translation teachers will be inspired to use some of our findings where it really matters: in class.

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10 Appendices

Appendix A: Source texts

Text 1: L1 translation (English-Croatian)

The Golden Age

Christianity had been brought to the island by an English-born rustic missionary, St Patrick, who had been kidnapped as a youth and taken to Ireland to tend sheep. Later, he travelled widely in France and Italy, returning to Ireland in 432 to spread the word of Christ through the trackless forests. He found, in this land of which he was to become the patron saint, a largely peaceable people, though there was intermittent feuding between various provincial kings.

In the absence of a Roman substructure of towns and cities, monasteries became centres of population. The kings kept their treasures there, which made the monasteries a target for plundering bands of Vikings, who sailed to Ireland in their high-prowed ships from northern Scandinavia. Tall round towers, many still standing, were built by the monasteries to serve as lookouts and refuges as well as belfries. Also surviving are some of the monks' exquisitely illuminated manuscripts, such as the *Book of Kells*, which the Vikings, being unable to read, ignored. Ireland's strong tradition of storytelling dates from this period. It can be seen on the many sand-stone high crosses, designed to teach Bible stories by means of elaborate carvings.

The Norse tyranny was destroyed at the Battle of Clontarf in 1014 by the most celebrated of the High Kings, Brian Ború, who saw himself as Ireland's Charlemagne. But he himself died in the battle as he was praying for victory.

[Source: Ireland, Insight Guides. Sixth (updated) edition, published in 2005]

Text 2: L2 translation (Croatian-English)

Hrvatska u doba narodnih vladara (do 1102.)

Najkasnije u IX. st., za vladavine Trpimira, Domagoja i osobito Branimira, Hrvatska poprima obilježja suvremene europske države, postaje samostalna kneževina i, što je bilo od iznimnoga politickog i gospodarskoga znacenja za buducnost hrvatske države, ucvršcuje se na Jadranu. Gospodarski razvoj i proces kristijanizacije (osobito intenzivan u IX. st.) glavni su cimbenici u procesu stvaranja hrvatske države. Kršcanstvo se medu Hrvatima širilo iz razlicitih središta: iz Rima, Akvileje i bizantskih gradova na dalmatinskoj obali, odnosno posredstvom franackih i bizantskih misionara, a ne može se zanemariti niti utjecaj slavenske misije Svete brace Cirila i Metoda (od posljednje cetvrtine IX. st.). Pokrštavanjem stanovništvo ulazi u zajednicku kršcansku civilizaciju koja se na ovim prostorima razvijala pod hrvatskim imenom, premda su papa i strani kronicari Hrvate do X. st. uglavnom nazivali "Slavenima".

Hrvati vjerojatno sve do X. st. nisu uspjeli prodrijeti u primorske gradove Kotor, Dubrovnik, Split, Trogir i Zadar, te ne otoke Rab, Osor i Krk, koji su ostali u rukama Bizanta.

Tomislav (oko 910. – oko 928.) je prvi hrvatski vladar kojega papa naziva kraljem (rex). Povijesni izvori govore o velikoj vojnoj snazi tadašnje hrvatske države i spominju pobjede Tomislava nad Madarima i vojskom mocnoga bugarskog cara

Simeona (893.–927.). Tomislav je proširio svoju vlast na medurjecje Save i Drave, a sadržaj papina pisma "ljubljenom sinu Tomislavu" naslucuje da je hrvatski vladar imao nekakav utjecaj i na dalmatinske gradove.

[Source: Hrvatska, Turisticka monografija (Croatia, Tourist Monograph), published in 2000]

Appendix B: Pre- and post-translation questionnaires

Pre-translation questionnaire

Please answer truthfully the following questions (you can add whatever comments you might have, either next to the questions or at the end of the Questionnaire).

If you"re filling out the questionnaire in electronic format, put an X instead of the box, for example, if the scale is:

◻ 1 ◻ 2 ◻ 3 ◻ 4 ◻ 5

and you want to tick "3," do it like this:

◻ 1 ◻ 2 x 3 ◻ 4 ◻ 5

1. Your name:
2. Your age:
3. Your contact address:
4. Your e-mail address:
5. Your telephone number/s:
6. Your mother tongue:
7. Your other subject (major) apart from English:
8. Where did you learn English? (If English is your mother tongue, please add also where you leant Croatian.)
9. Apart from English and Croatian, what other languages do you know? Next to each language, write one of the following words to describe your current state of knowledge: *native competence*; *proficient*; *sound*; *passive* or *basic*. (If none, skip to next question.)

Language: Knowledge:

_____   _____

_____   _____

_____   _____

10. Have you taken any courses in Translation Theory?

☐ yes   ☐ no (if not, skip to q. **11**)

10.a. If yes, in which department(s)?

☐ English Dept.   ☐ another Dept (which? _____)

10. b. Have you taken any exams in Translation Theory?

☐ yes, but not passed yet   ☐ yes, passed (which mark/s? _____) ☐ not yet

11. Have you taken any translation seminars?

☐ yes   ☐ no (if not, skip to q. **12**)

11.a. If yes, in which department(s)?

☐ English Dept.   ☐ another Dept (which? _____)

11.b. Have you got any marks in translation seminar/s?

☐ yes (which? _____) ☐ no

12. Have you ever learnt about the use of translation aids (dictionaries, the Internet…)? If yes, where?

13. Have you ever done any translation outside the university courses?

☐ yes   ☐ no (If not, skip to q. **14**)

13.a. If yes, what type of text/s have you translated and in which field?

13.b. In which direction have you translated?

☐ mostly into my mother tongue

☐ mostly into a foreign language

☐ in both directions equally

13.c. Who did you translate for? (e.g. a friend, a firm...)

13.d. Were they paid translations or a favour?

☐ paid ☐ unpaid

14. Do you have regular internet access?

☐ yes   ☐ no

How often have you used the internet in the past year as a translation aid?

never ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very often

15. What type of texts in English have you been reading or listening to in the past year?

Write *1* for *never*, *2* for *rarely*, *3* for *sometimes*, *4* for *often* and *5* for *very often* next to each type (you can add other types and rate them in the same way):

Novels ……………………………………………………………………._____

Short stories ………………………………………………………… _____

Poetry …………………………………………………………………… _____

News reports in print ……………………………………………… _____

News reports on TV ……………………………………………… _____

Longer newspaper/magazine articles ……………………………… _____

Academic texts …………………………………………………… _____

Technical / specialised texts ……………………………………… _____

Travel brochures or guides………………………………………… _____

Forum posts ………………………………………………………

_____

Other texts on the web (pls specify type) ………………………… _____

Films, series or other programmes on TV, video or DVD (with subtitles) _____

Films, series or other programmes on TV, video or DVD (with**out** subtitles) _____

Other (which? _____) …………………… _____

_____ ………………….. _____

_____ ………………….. _____

16. Do you have access to any English-language television stations?

☐ yes   ☐ no (if not, skip to q. **18**)

17.a. If yes, which and how often do you watch them? (use the labels from question **16**)

Station or programme   How often

_____   _____

_____   _____

_____   _____

_____   _____

17. What type of texts <u>in Croatian</u> have you been reading or listening to in the past year?

Write *1* for *never*, *2* for *rarely*, *3* for *sometimes*, *4* for *often* and *5* for *very often* next to

each type (you can add other types and rate them in the same way):

Novels ………………………………………………………………_____

Short stories …………………………………………………… _____

Poetry ………………………………………………………… _____

News reports in print …………………………………………… _____

News reports on TV …………………………………………… _____

Longer newspaper/magazine articles …………………………… _____

Academic texts ………………………………………………… _____

Technical / specialised texts …………………………………… _____

Travel brochures or guides……………………………………… _____

Forum posts …………………………………………………… _____

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Other texts on the web (pls specify type) ………………………………… _____

Films, series or other programmes on TV, video or DVD (with subtitles) _____

Other (which? _____) …………………… _____

_____ ………………….. _____

18. What kinds of activities have you done (outside class) to improve your translation skills in the past year?

19. Do you like translating *on your own*?

strongly dislike ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 like very much

Do you like translating *with others* (in pairs or groups)?

strongly dislike ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 like very much

20. Do you prefer translating on your own or with others?

☐ on my own   ☐ with others   ☐ no preference

How do you feel about your knowledge of English at this moment?

very dissatisfied ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very satisfied

21. How do you feel about your knowledge of Croatian?

very dissatisfied ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very satisfied

22. In which direction do you *prefer* translating?

☐ into my mother tongue   ☐ into a foreign language   ☐ no preference

23. In which direction do you find it *easier* to translate?

☐ into my mother tongue   ☐ into a foreign language   ☐ no preference

24. Please explain your answers in the previous two questions:

25. What are, for you, the main difficulties in translating into your mother tongue?

26. What are, for you, the main difficulties in translating into a foreign language?

27. What marks did you get in your final translation exam:

English – Croatian: _____   Croatian – English: ____

28. Do you feel that these marks reflect, more or less accurately, the state of your knowledge and skills at this time?

☐ yes ☐ no (if not, why?) _____

29. When you graduate, would you like to be involved in translation in any way?

☐ yes, as a professional translator/interpreter

☐ yes, part-time, in combination with another, "main" job

☐ only occasionally, as a favour for a friend or relative

☐ not at all

30. Do you agree to take part in this study?

☐ yes ☐ no

31. Do you agree for the findings of the study gathered from your answers to this questionnaire as well as (parts of) your individual translation, its accompanying diary, your joint translation and/or the audio/video recordings of the group discussion, to be published anonymously (i.e. without your real name or the names of the other subjects being mentioned in the publication)?

☐ yes ☐ no

Thank you for your time!

Date: _____ Your signature: _____

Post-translation questionnaire(s)

[Different combinations of the following sections of the post-translation questionnaire were used, depending on whether the subjects worked individually or in groups, and on which of the two texts they translated first.]

Please answer truthfully the following questions (put an x instead of the box):

I. About the translation **from English into Croatian** (*The Golden Age*):

1. How long did you work on this translation (approximately)?

2. How difficult did you find the task?

very easy ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 very difficult

3. Are you satisfied with your final product?

very dissatisfied ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 very satisfied

4. Which aspect/s of your final product are you most satisfied with and why?

5. Which aspect/s of your final product are you most dissatisfied with and why?

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6. Did you enjoy working on this translation?

not at all ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very much

7. Here you can write whatever additional comments you have about this translation task:

II.   About the translation **from Croatian into English** (*Hrvatska u doba narodnih vladara*):

1. How long did you work on this translation (approximately)?

2. How difficult did you find the task?

very easy ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very difficult

3. Are you satisfied with your final product?

very dissatisfied ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very satisfied

4. Which aspect/s of your final product are you most satisfied with and why?

5. Which aspect/s of your final product are you most dissatisfied with and why?

6. Did you enjoy working on this translation?

not at all ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very much

7. Here you can write whatever additional comments you have about this translation task:

III. **Overall:**

1. Which of the two translations did you find more difficult?

☐ English into Croatian   ☐ Croatian into English ☐ more or less the same

2. Which of the two translations did you like doing more?

☐ English into Croatian   ☐ Croatian into English ☐ more or less the same

3. Which of the two translations do you think you did better?

☐ English into Croatian   ☐ Croatian into English ☐ more or less the same

4. Here you can write whatever additional comments you have:

IV. For those who translated with someone else (please answer truthfully, your colleagues will not be shown your answers):

1. How would you describe the *relations* in your team during your group translation task:

very conflicting   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very cooperative

How would you describe the *atmosphere* during the group work? very creative   ☐ 1   ☐
2   ☐ 3   ☐ 4   ☐ 5 very dull

Are you satisfied with the way your team *worked* on the group translation? very dissatisfied
☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very satisfied

2. What aspect/s, if any, of your *work* together were you *most satisfied* with and why?

3. What aspect/s, if any, of your *work* together were you *most dissatisfied* with and why?

4. How much do you feel *you contributed* to the final version of the translation?

   not at all   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very much

5. Do you feel that the *other members* of your team did their share of the work?

   not at all   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 very much

6. During the joint task, did you feel you had an opportunity to *say* what you wanted?

   never   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 always

7. Did the other members of the team *listen* to what you had to say?

   never   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 always

8. Were your suggestions *accepted* for the final version of the translation?

   never   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 always

9. When your suggestions were not accepted, were you *happy* with the solutions your

   colleagues decided on?

   never   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5 always

10. Write here whatever additional comments you may have about translating in groups:

Your name: _____

Many thanks!!

Appendix C: Examples of Integrated Problem and Decision Reports

Student 1

Report on L1 translation:

▪ English-born: I looked it up on the Internet under "Sv. Patrik" and found that they
  translate it as "roden u Britaniji" and not "Engleskoj" as I thought at first
  (www.skac.hr/svetacdana/3/17_3.html)

- rustic missionary: I didn't know what to do with "rustic", looked it up on the Internet and found that they use only "misionar" so I decided to omit it (www.skac.hr/svetacdana/3/17_3.html)

- the word of Christ: I consulted my Dad about the capitalization (rijeci Kristove or Rijeci Kristove) and decided on the first option (rijeci Kristove)

- trackless forests: I looked up the translation of the word "trackless" in English-Croatian dictionary (Bujas) but I didn't find a satisfactory translation, then I thought of using "neprohodan" or "nenastanjen", and then I found "samotan" on the Internet (www.skac.hr/svetacdana/3/17_3.html) and decided to use it

- He found, ..., a largely peaceable people: I had trouble translating "found" so that it sounds ok, and in the end decided to change the structure of the sentence a bit by omitting St Patrick as the subject and used: U toj zemlji...obitavao je narod

- intermittent: I looked up the translation in Bujas and used "povremeni"

- In the absence...: I thought of using "u nedostatku", but it didn't sound right so I used "Buduci da nisu postojali..."

- substructure: I used the translation from Bujas (temelji)

- plundering: I used the translation from Bujas (razbojnicki)

- high-prowed ships: first I tried to find it in Bujas, but with no success, so I asked my Dad, explained the English term and used "galije"

- belfries: I found it in Bujas (zvonici)

- illuminated manuscripts: I tried with Bujas and then the Internet where I found something about the *Book of Kells* which was mentioned in connection with these manuscipts and used "bogato ukrašeni spisi" (www.filg.uj.edu.pl/~wwwip/postjugo/texts_display.php?id=225)

- the *Book of Kells*: I found an article about it on the Internet and saw that it wasn't translated, so I didn't either (www.filg.uj.edu.pl/~wwwip/postjugo/texts_display.php?id=225)

- sandstone high crosses: I looked up the word "sandstone" in Bujas, but I wasn't satisfied with the term (kamen pješcenjak) so I omitted specifying the type of stone and used a general term,translating the phrase as "veliki kameni križevi"

- elaborate: I found it in Bujas and between two options (složen, podroban) chose the latter

- Norse: I looked it up in Bujas (Norvežani)

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- Clontarf: I googled the term "Bitka kod Klontarfa" and saw that the term "Klontarf" is used so I used it, too

- The High Kings: I tried to find it in Opca enciklopedija and on the Internet under various names (Veliki kraljevi, Brian Ború, Bitka kod Klontarfa), but without success; in the end I decided to use "Veliki kraljevi"

- Charlemagne: I typed it into Google and saw that they use "Karlo Veliki", just as I thought, so I used it

Report on L2 translation:

- narodni vladari: I typed it into Google and found it on the Internet (http://gocroatia.info/article.php?id=3)

- Trpimir, Domagoj, Branimir: although it didn't say "knez" in the original text, I decided to add "Dukes" in order to explain who they were; I found it on the Internet (www.croatianhistory.net/etf/et01.html#dukes)

- država: I found on the Internet that the word "state" and not "country" is used (www.croatianhistory.net/etf/et01.html#dukes)

- kneževina: found it (princedom) on the Internet (http://gocroatia.info/article.php?id=3)

- proces kristijanizacije: I found it on the Internet (http://www.myriobiblos.gr/texts/english/timiades_byzantine_2.html)

- središta (Rim, Akvileja..): I thought of using centers, but then decided on important cities

- Akvileja: I found it on the Internet (http://www.aquileia.it/)

- bizantski: I found it in Bujas (Byzantine)

- franacki: I couln't find it in Cro-Eng dictionaty (Bujas), so i tried in Eng-Cro dictionary (Bujas) and found it there and on the Internet (http://www.kessler-web.co.uk/History/KingListsEurope/EasternCroatia.htm)

- Sveta braca Ciril i Metod: I found it on the Internet (http://www.myriobiblos.gr/texts/english/timiades_byzantine_2.html)

- pokrštavanje: I found it in Oxford Collocations dictionary (adopting Christianity)

- zajednicka (kršcanska civilizacija): I found it in Bujas

- kronicari: I found it in Bujas (chroniclers)

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- Hrvati vjerojatno sve do X.st. nisu uspjeli...: I decided to put "sve do Xst." first because I couldn't fit it anywhere else without sounding strange or interrupting the meaning, so the sentence starts with "Until probably the 10th century..."

- prodrijeti: I looked it up in Bujas and decided to go with "force their way into"

- u rukama Bizanta: I omitted the part with hands and simply said "under the Byzantine Empire"

- Tomislav je prvi...: I rearranged the sentence a bit and started with "The first Croatian ruler"

- kojeg papa naziva kraljem: I found on the Internet that they use "recognize as" (http://www.reference.com/browse/wiki/Tomislav)

- Povijesni izvori govore o: I thought of using state, mention or speak of, and in the end decided on using "speak of"

- Madari: I found two versions on the Internet (Magyars and Hungarians) and decided to use the latter because it's more commonly used (http://www.kessler-web.co.uk/History/KingListsEurope/EasternCroatia.htm)

- car Simeon: I didn't know whether to use emperor or tsar, but decided to use "tsar" after I found it on the Internet (http://www.bulgaria.com/history/rulers/simeon.html)

- medurjecje: I couldn't find any other translation so I used "the area between the rivers Sava and Drava"

- naslucuje: at first I thought of using "gives a hint", but it sounded too informal so I decided to use "indicates"

Student 2

Report on L1 translation:

Resources:

- Bujas, Željko. *Veliki englesko-hrvatski rjecnik*. Nakladni zavod Globus, Zagreb, 2005.

- *Drvo znanja* 56 (listopad 2002)

- Du Ry van Beest Holle, Gérard i dr. *Velika ilustrirana povijest svijeta*, svezak 8. Otokar Keršovani, Rijeka, 1976.

- www.google.hr:

- hr.wikipedia.org

- www.croatiahistory.net

- ■ www.nationalgeographic.com.hr
- ■ www.skac.hr

Problems encountered:

- ■ "bring Christianity" – "donijeti kršcanstvo" – at first it sounded strange, as if Christianity was an object; later I remembered that such a collocation exists
- ■ "English-born" – "roden u Engleskoj"; "porijeklom iz Engleske"; "iz Engleske" – decided for the last option because it is the shortest and most neutral
- ■ "rustic" – meaning "sa sela" or "neobrazovan"? – found out that Saint Patrick talked about his "rusticitet" = nedostatak izobrazbe on www.skac.hr/svetacdana/3/17_3.html - chose "neobrazovan"
- ■ "had been kidnapped" – from passive to active; passive is not so common in Croatian as in English
- ■ "tend sheep" – "brine se za ovce"? – remembered "cuva ovce"
- ■ "travel widely" – cannot say "široko putovati", but "puno/mnogo putovati"
- ■ "returning to Ireland" – cannot say "vrativši se u Irsku" – not widely used in Croatian; wrote a coordinated sentence ("te se vratio...")
- ■ "word of Christ" – wrote "Rijec Božju" because it is the usual collocation in Croatian
- ■ "trackless forests" – meaning "bez puteva", "negažen" or "neprohodan"? – Bujas: "bez puta" – wrote "neprohodna" because it goes with "šuma"
- ■ "found" – "našao" – bolje "naišao je na" – people were there all the time, he did not discover them
- ■ "patron saint" – "svetac zaštitnik" (Bujas)
- ■ "feuding" – "sukob" or "svada" – better "sukob" because it refers to political matters, conflicts between kings
- ■ "there was intemittent feuding" - "bilo je povremenih sukoba" – wrote "povremeno" as an adverb and turned the noun "sukob" into a verb (some of the things that the English express with nouns, Croats tend to express with verbs)
- ■ "provincial kings" – "plemenski kraljevi" (found on www.skac.hr/svetacdana/3/17_3.html)
- ■ "in the absence of" – turned it into a clause rather than writing "u nedostatku" (noun vs. verb)

- "substructure of towns and cities" – refers to the architecture and way of building; thought of translating it with "arhitektura", decided to make a clause (again, better with a verb)

- "towns and cities" – in Croatian they are both "gradovi"; that is way I decided to write down "naselja" as well

- "centres of population" – "središta stanovništva" sounds strange; it actually refers to living; wrote "središta življenja"

- "plundering bands" – "pljackaški pohodi" (from hr.wikipedia.org/wiki/Vikinzi)

- "plundering bands of Vikings" – could not put "vikinški pljackaški pohodi" because the following clause refers to the Vikings only

- "high-prowed ships" – could not find any good translation, it actually refers to typical Viking ships = "vikinške lade" which are narrow and long; found "dugi brodovi" on

- www.nationalgeographic.com.hr/default.asp?ru=223&gl=200602240000004&sid=&jezik=1

- "sailed to Ireland..." – changed the WO, wrote "iz sjeverne Skandinavije" first to emphasize where they came from

- "tower" – "kula" or "toranj"? – decided for "toranj", "kula" reminded me of castles

- "still standing" – the towers are in good shape – wrote "još su citavi"

- "built by the monasteries" – the buildings did not built the towers, they are not people – wrote it neutrally – "u samostanima su se gradili" – also wrote it in active instead of passive

- "lookout" – "promatracnica" (from Bujas)

- "belfry" – "zvonik" (from Bujas)

- "also surviving are..." – wrote "sacuvani su" because "preživjeli su" refers to animate beings

- "illuminated manuscripts" – "iluminirani rukopisi" (from www.croatiahistory.net)

- "the Book of Kells" – could not find a translation of the book into Croatian, so I left it in English

- "the Vikings ignored" – they did not give the book the cold shoulder, so you cannot put "Vikinzi su je ignorirali", but rather "nisu se obazirali"

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- "storytelling" – "pripovjedanje" (from Bujas) - "pricanje prica" reminds me of parents reading their children bed-time stories

- "from this period" – put it at the beginning of the sentence to emphasize that the author is still talking about the same period

- "Ireland's tradition" – "tradicija u Iraca", not "u Irskoj" – it is the people that tell stories

- "sand-stone" – "pješcenjak" (from Bujas)

- "elaborate" – "pažljivo izraden" (from Bujas)

- "to teach Bible stories" – to whom? – wrote "poucavati ljude"

- "Norse tyranny" – "tiranija Normana" (*Drvo znanja* 58 (2002) refers to the Vikings as "Normani" in an article called "Vikinški pohodi"; also found the same expression on hr.wikipedia.org/wiki/Vikinzi and in *Velika ilustrirana povijest svijeta*)

- "tyranny was destroyed" – used "zaustavljena" rather than "uništena" – it is not an object

- "Battle of Clontarf" – could not find a translation to Croatian, wrote "bitka kod Clontarfa" (same expression as in e.g. bitka kod Waterlooa)

- "High King Brian Boru" – wrote "plemeniti kralj" (found "irski plemeniti kralj Boru on www.nationalgeographic.com.hr/default.asp?ru=223&gl=200602240000004&sid=&jezik=1)

- "The Norse tyranny was destroyed..." – wrote the sentence in active because it is more used than passive

- did not know where to put the battle and the year – wrote it at the beginning so that I did not break the continuity of the sentence

- "praying for victory" – "molio se za pobjedu"? – it refers to hope that he was feeling during the battle, so I wrote "nadajuci se pobjedi" (used glagolski prilog sadašnji)

Report on L2 translation:

Resources:

- Bujas, Željko. *Veliki hrvatsko-engleski rjecnik*. Nakladni zavod Globus, Zagreb, 2001.

- Longman Dictionary of Contemporary English (CD ROM)

- www.google.hr:
- en.wikipedia.org
- www.answers.com
- www.freedictionary.com
- www.gocroatia.info

Problems encountered:

- "u doba" – "during the rule"; "under the rule"; "at the time" – decided for "at the time" - in this case there is no repetition ("rule" and "ruler")
- "narodni vladar" – "national rulers" (found it on www.gocroatia.info/article.php?id=3 in an article on Croatian medieval rulers)
- "knez" and "kneževina" – "prince" and "principality" vs. "duke" and "dukedom" – articles on the Internet use both terms, decided for "prince" and "principality" because it is listed in Bujas; also found it in Longman and en.wikipedia.org/wiki/Prince
- "osobito Branimira" – "especially Branimir"; "Branimir in particular" – second option sounded better
- "poprimati obilježja" – "acquire characteristics" (found in Bujas)
- "što je bilo od iznimnog..." – put at the end of the sentence – this way the sentence was not broken
- "ucvrstiti se" – "consolidate its position" (Longman Dictionary)
- "hrvatska država" – "state" or "country"? – decided for "state": "country" refers more to "zemlja" (just the land, not the organization)
- "kristijanizacija" – "Christianization" – capitalization
- (found it on en.wikipedia.org/wiki/History_of_Croatia)
- "intenzivan" – "intense" sounded strange (as if there were conflicts), used "strong" – seemed a good solution since it refers to the magnitude of the process
- "glavni cimbenici" – "main factors"; "deciding factors" – decided for "deciding" (found it in Longman – a common collocation)
- "stvaranje države" – "creating", "establishing" or "forming" – decided for "forming" - it refers to determining the boundaries of the country, its structure and organization ("establish" seems to refer just to the beginning of the process, and "create" is more related to art and artistic expression)
- "Akvileja" – "Aquileia" (found it on Wikipedia, www.aquileia.it)

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- "bizantski" – "Byzantine" (from Longman)

- "bizantski gradovi" – "town" or "city" – decided for "city" (found "Dalmatian cities" on www.answers.com/topic/medieval-croatian-state/dukedom/duchy/duke)

- "franacki" – "Frankish" (found on www.answers.com/topic/medieval-croatian-state/dukedom/duchy/duke)

- "a ne može se zanemariti..." – decided to make a separate sentence (the original sentence seemed too long); put the noun before the verb in order to emphasize the mission

- "slavenska misija" – "Slavic mission"? – found "Moravian mission" on en.wikipedia.org/wiki/Saints_Cyril_and_Methodius

- "Sveta braca" – "Holy Brothers"? – did not hear of such a collocation, put "Saints" because it is widely used

- "Ciril i Metod" – "Cyril and Methoduis" (found in Bujas and on en.wikipedia.org/wiki/Saints_Cyril_and_Methodius)

- "pokrštavanje" – "Christianization" or "conversion" – decided for the latter to avoid repetition

- "zajednicka kršcanska civilizacija" – could not find such a collocation in English, so I used "common" (since it refers to Christian civilization as "community")

- "kronicar" – "chronicler" (found in Bujas and www.freedictionary.com/chronicler)

- "nazivati" – "call" or "refer to" – "call" gives you the feeling that the Pope and the chroniclers shouted at the Croats calling them Slavs (as an insult)

- "vjerojatno" – wrote "It is likely" - often used in English; better solution than "probably"

- "prodrijeti" – "infiltrate"; "force"; "pervade" (Bujas) – put "invade" (used in Longman)

- "primorski gradovi" – "coastal cities" (from www.answers.com/topic/medieval-croatian-state/dukedom/duchy/duke)

- "sve do 10.st." – did not know where to put it – it belongs to the end, but I had to separate it from "Byzantium" to show that it refers to the Croats' invading

- "Bizant" – "Byzantium" (from Longman)

- "kojeg papa naziva kraljem" – "was dubbed king by a pope" (found "was dubbed" on www.answers.com/topic/medieval-croatian-state/dukedom/duchy/duke); *a* pope, not *the* pope – any pope, not one particular

- "govore o" – "speak of" does not sound good (sources do not have a mouth); used "report on" – reminded me of the newspapers and different documents

- "pobjede nad Madarima i vojskom..." – "victory *over* the Hungarians and *over* the army..." – those are two different battles, therefore, two different victories (that is why I used "over" twice

- "car Simeon" – "Tsar Simeon" (found on www.answers.com/topic/medieval-croatian-state/dukedom/duchy/duke)

- "medurjecje" – could not find a translation; remembered that Mesoptamia means "medurjecje"; checked the English equivalent on the Internet; found "basins of the Euphrates and Tigris rivers" on en.wikipedia.org/wiki/Mesopotamia

- "naslucuje" – "hint", "insinuate" – remembered "indicate" (refers to "pokazuje", "points to")

- "imati utjecaj" – "exercise influence" (from Longman)

Student 3

Report on L1 translation:

- it seemed weird to translate the first sentence as "Sveti Patrik je **donio** kršcanstvo", so I changed the sentence a bit. I also had to translate "island" as "stanovništvo otoka" because I used the phrasal verb "doci u doticaj s", and it was more natural to say "stanovništvo je došlo u doticaj s" than "otok je došao u doticaj s".

- to tend sheep – I tried to avoid translating this as „cuvati ovce", because it sounds kind of demeaning in the Croatian version

- trackless forests – I'm still not sure whether my choice was right or not, this part of the sentence is confusing. The only translation I found for "trackless" is "bez puta", with a notion of isolation implied. I have to suppose that the person who wrote the text knows a lot more than me, or I missed some hidden point☺.

- the word of Christ – I decided on "Božja rijec" because to me it sounded better than "rijec Kristova" or "Isusova rijec".

- provincial kings – at first I wanted to translate "kings" as "vladari" in a general sense, but then I mention "kraljevska riznica" in the next paragraph, so I changed it to "kraljevi" for the sake of consistency.

- Roman substructure – I used the Croatian term "podgradnja" instead of "infrastruktura". I know that "infrastruktura" is still more familiar to people (myself included), but I refused to stick to it despite the fact that it might confuse a reader (or two). When I googled for "podgradnja" I found a number of texts in which this term is used. I also didn't want to put "infrastruktura" inside brackets, in order to make the reader (who doesn't know the word) look it up, learn it, and start using it. Just like I did.

- "also surviving are..." - I used "preživjelo", because I didn't want to repeat the verb "ocuvati" which I used in the sentence before that. I put inverted commas to signify a "free use" of the verb which is usually used when referring to animate objects.

- "The Book of Kells" - I googled for "knjiga kellsa" and found many Croatian websites which mention "Knjiga iz Kellsa", so I used both in the translation.

- strong tradition – literal translation sounded somewhat unnatural to me. Although I found many Croatian websites which use the phrase "jaka tradicija", I decided on "živa tradicija" which I intensified with "vrlo" to imply the strength of the tradition.

- sand-stone high crosses – I didn't find an exact term in Croatian for this, maybe there isn't any, I only found a Wikipedia article on Irish high crosses (http://en.wikipedia.org/wiki/High_cross), so I translated it literally into Croatian. I also used "od pješcenjaka" to specify a type of stone, instead of simply using "od kamena/kameni"

- High Kings – I found one article in Croatian which mentions "Veliki kraljevi". http://p088.ezboard.com/Povijest-Irske/fkrugoval78102frm9.showMessage?topicID=17.topic

- This translation would have been my first choice before I looked it up on the Internet, so I decided to use it, in the absence of any other material on Irish history.

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Report on L2 translation:

▪ title – I googled and found this website dedicated to Croatian history (**http://hrclub.deviantart.com/journal/10292797/**). My version of the title is based on their classification of main historical periods in which they mention "The period of Croatian Dukes and Kings of native birth (until 1102)". I shortened it according to the title I had to translate, so it became **The period of Croatian native rulers (until 1102)**.

▪ I changed the syntax of the second part of the first sentence, because I didn't want to split the sentence into two parts – if I had kept the structure of the original text, I believe it would have turned out clumsy

▪ kneževina – I had to consult http://www.design-ers.net/eh-rjecnik.asp and www.eudict.com in order to find the right term

▪ osobito intenzivan – I used "notably intensive" instead of "especially intensive" so as not to repeat "especially" within one paragraph

▪ Akvileja – I didn't exactly know how to translate this into English, so I guessed with Aquileia and it turned out I guessed right – it led me to a Wikipedia article http://en.wikipedia.org/wiki/Aquileia

▪ Sveta braca Ciril i Metod – I first googled for"the Holy brothers" and a number of links appeared among which I opened this one http://www.pensoft.net/notes/9584.stm and took their version "The Holy brothers Cyril and Methodius". I was thinking about putting the Croatian version of their names inside brackets, but eventually decided against it because I think it wouldn't mean much to an English speaking reader

▪ populacija – I added "Croatian" in the translation so that it would be more clear that it referred to Croatian population

▪ prodrijeti – the verb "penetrate" first came to mind, but since I find it semantically contaminated by sexual connotations, I decided on "pervade":).

▪ Pope/pope – I wasn't sure whether to use small or capital letter at first, but I saw that the capital letter is extensively used on the Internet, so I decided on it

▪ kronicari – I didn't know the right term in English and couldn't find it on the web, so I checked my Oxford bilingual dictionary and found "chronicler"

▪ the islands **of** Rab, etc. VS. the islands Rab, etc. – I decided on the former because it sounded a bit more official and in accordance with the tone of the text,

plus I saw that this version was also used by a professional translator while I was looking into a tourist text during my practice at Stentor last week☺

- medurjecje Save i Drave – I first thought to translate this as "Sava and Drava interriver", but I checked for the noun "interriver" with Google and the first result was this website http://archaeology.kiev.ua/books/koloda.htm which mentions "the Dnepro-Don interriver territory", so I decided to use "the Drava-Sava interriver teritory" in my translation

- "povijesni izvori **govore o**" – I couldn't think of a better translation than the literal "**speak of**"

- I also looked into web dictionaries in search of some right terms to use, and here they are: www.eudict.com, www.onelook.com, http://web.math.hr/~igaly/EH43/EHpregled.htm, http://www.design-ers.net/eh-rjecnik.asp

- I didn't need many resources during translating, the original text is not very difficult, and my main worries were not the right terms but syntactical structures, "how to make it sound more English"

Student 4

Report on L1 translation:

- how to organize the first sentence? To many adjectives describing Patrick. And that hyphen thing. Is "sveti" with capital letter? No, says "Pravopis"

- trackless forests! What is that supposed to mean? Did he travel through trackless forests or the would-be converts live there? Don't know. Maybe "nepristupacni dijelovi" would sound better, although we lose the original. Tough decision.

- Second paragraph: first sentence – change of the word order in the sentence. "Stanovništvo i samostan" will go first, and "Roman substructure" will follow, since I don't want to start the sentence with "buduci da". It sounds better now. More important parts are at the beginning.

- Town vs. City. Town is smaller. What? "Gradic»" and "grad". Sounds terrible. "Selo"? No. "Naselje". I'm feel confortable with that one. Than let's start the next sentence with "Samostani". I'll add "Mjesta" to avoid "tamo", "ondje" etc. Now comes a problem. What should go first? "Irska", "Vikinzi", "brodovi", "Skandinavija"???? I tried out every possible combination, but I am still not satisfied. Somehow I don't know what to emphesize here. If I change the word

order, something else will be highlighted. Still not satisfied, but since I cannot think of a better solution, I"ll leave it this way.

- Must remove the pasive structure. But, can "samostan" build a tower? If I say monks, it will sounds as if the monks themselves worked on it. No way. "samostan" sounds a bit better.

- Book of Kells – no Croatian translations of the book, as far as I could see. So I"m going to leave the original name.

- High Kings – this a tricky one. Freedictionary.com says that some claim that there was never such a thing as High King of Ireland. But it also mentiones that some claim that it existed. So they give both claims. But the idea is that it was a sort of the supreme king of all Irish kings (there were many small kingdoms at the time). So I"ll use vrhovni, which is more as a description than an official Croatian title. Couldn't find any on the net.

Resources:

- For: "sveti", "sjeverna Skandinavija"
- Babic, Finka, Moguš: *Hrvatski pravopis.* Školska knjiga, Zagreb, 1971.
- *Pravopisni prirucnik.* Zajednicko izdanje: EPH, Zagreb i Novi Liber, Zagreb, 2003.
- For: town Vs. City
- *Oxford Advanced Learnes Dictionary,* the 6th edition
- For "Book of Kells"
- www.destinacije.com/thumbs.asp?lang=hr&folder=Slike-Irska
- www.croatia.ch/kultura/knjizevnost/glagoljica.php
- www.filg.uj.edu.pl/~wwwip/postjugo/texts_display.php?id=225
- For "High Kings"
- http://education.yahoo.com/reference/encyclopedia/entry/Ireland
- http://encyclopedia.thefreedictionary.com/High+King+of+Ireland

Report on L2 translation:

- First sentence is a bit clumsy and it is far too long, so I'll break it in two smaller sentences.

- Then comes the eternal question: is it economic or economical? I don't know why I cannot remember that one. It is economic, of course.

- ■   - "narodni" – native, said my sources, which I will list below the text. The greatest problem here was where to find the expressions for nations, people and so on. So I connected to the "almighty" internet. Luckily, I managed to find all I needed, including Cyril and Methodius.

- ■   I have some problems with "zanemariti". I came out with a pretty bad solution and I am not satisfied. It seems that also is in the wrong place, if needed at all and the verb sound silly to me. I"ve been thinking about introducing "we" so it would sound like this: "we cannot disregard the influence of the brothers …" But then, there is "the issue of takoder". Don't know. Not happy.

- ■   Koja se razvijala pod hrvatskim imenom – I am not sure I understand what this expression means, but I"m pretty sure that there is another way to say it, even in Croatian.

- ■   Last paragraph. The/a /0 Pope. Use of the article. There was a specific Pope that called Tomislav king. But that particular Pope was not mentioned before. So I decided to interpret the sentence in the following way: Tomislav was the first Croat any Pope in the history of Popes and Croatia called king. One Pope decided to give some Croat noble that title.

- ■   Medurjecje: here I chose a diplomatic solution. I don't know the word for medurjecje nor was I able to find it. Therefore, the land between the rivers Sava and Drava

Resources:
- ■   For economic vs. economical
- ■   *Oxford Advanced Learner's Dictionary,* 6th edition
- ■   For narodni
- ■   http://en.wikipedia.org/wiki/History_of_Croatia
- ■   For names of places, personal names etc.
- ■   http://en.wikipedia.org/wiki/Saints_Cyril_and_Methodius
- ■   http://en.wikipedia.org/wiki/Names_of_European_cities_in_different_languages:_A
- ■   http://en.wikipedia.org/wiki/History_of_Croatia
- ■   Other:
- ■   Drvodelic: *Hrvatsko- engleski rjecnik,* Školska knjiga, Zagreb, 1996.
  Roget's Thesaurus, 2001.

Appendix D: Subjects who took part in the experiments

The names of students are given in (Croatian) alphabetical order. Throughout this dissertation, fictional names are used.

Subjects in the pilot study:

Maja Blažun; Hana Jušic, Dunja Plazonja, Jelena Mandic, Danijela Mažar, Maja Mrsin, Ivana Popov, Hana Stipetic, Bruno Štefic.

Subjects in the main study:

Nikolina Badun, Mirna Furdek, Anita Groznica, Tvrtko Ivaniševic, Tajana Korkut, Petra Matjašec, Iva Novakovic, Sandra Pavlovic, Monika Ranogajec, Antonija Sunara, Vinko Zgaga, Vinka Zgrablic.

Subjects in the pre-testing and the control experiments:

Natalija Arbutina, Bilanda Ban, Ksenija Bandic, Lea Banovic, Maja Basara, Ivana Blažekovic, Zana Boljkovac, Ljiljana Breulj, Jasmina Buncic, Silvija Bungic, Melita Cale, Lana Dojcinovic, Sandra Domazet, Marija Dragicevic, Nataša Đurdevic, Josip Evic, Ines Gazibara, Goran Gledic, Maja Gložinic, Slavica Habjanovic, Suncica Habus, Danko Hecimovic, Kristijan Horvat, Marijana Horvat, Jelena Horvatic, Aleksandar Ignjatovic, Eva Jakupcevic, Marija Jankovic, Snježana Javurek, Ana Jerkunica, Nikolina Jurišic, Vanja Kelemen, Teuta Klaric, Koraljka Korbar, Željka Košcevic, Rozana Kramar, Maja Kuzel, Martina Lackovic, Zorana Lerotic, Tvrtko Lovrekovic, Jasenka Ljuština, Eva Martic, Melanie Mikulic Tvrdinic, Ana Opacak, Petar Pavlic, Ana Peric, Marija Petak, Marinela Petricevic, Matija Polic, Ivana Pomahac, Martina Pranic, Lea Rakas, Tina Smoljan, Lucija Šimunic, Martina Španovic, Josipa Tomljanovic, Tanja Valsted, Silvija Vlahovec, Gabrijela Vrankic, Ivana Zovko, Ana Zupcic.

[1] Throughout this dissertation, works written in German are only cited through English references due to our lack of competence in the German language. Care was taken to read the German authors' work in English where available.

[2] Cf. Shön's discussion in 1987: 24-5. Also, see Nisbett and Wilson 1977 for a discussion on the subjects' (lack of) awareness of motives for their actions. Nisbett and Wilson's view has been contested by Ericsson and Simon (1984/1993), but only insofar as stringent conditions are applied to verbal protocols.