

INVISIBLE PROCESS – COGNITION AND WORKING MEMORY OF DIALOGUE INTERPRETING

Purpose and aims

The purpose of this exploratory project is to investigate the nature of cognitive resources in Dialogue Interpreting (DI), in particular the function of the monitoring processes and working memory. The project focuses on community interpreting, probably the most widespread type of dialogue interpreting in today's multilingual world, which enables communication between majority communities and refugees and immigrants. In this project presentation we use the terms "community interpreter/interpreting", which encompasses the (professional) interpreters doing interpreting services in institutional settings in encounters between a private party and an official (doctor, police officer, civil servant and so forth), and "dialogue interpreter/interpreting", which represents the act or person interpreting dialogues between a small number of parties, as opposed to larger meetings, conferences and other similar settings.

Specific aims

The aims of the project are

- to analyze the cognitive processes involved in interpreting dialogues,
- to propose a model of the cognitive processes involved in interpreting dialogues, which takes into account process-oriented research on other types of interpreting as well as, more specifically, the professional competences of community interpreters
- to explore whether there are type-specific demands on working memory as compared to other types of interpreting, and, in that case, the nature of these type-specific demands,
- to probe into community interpreters' working memory and cognitive processing of monitoring; this will be done by combining quantitative and qualitative methods with
 - psycholinguistic experiments with professional community interpreters and interpreter students
 - video recordings of interpreted encounters elicited from semi-scripted role plays both with professional community interpreters and interpreter students

Research questions

- 1) What are the main differences and similarities between the cognitive processes of experienced, professional community interpreters and interpreting students when it comes to central executive functions, for example, attention sharing and switching, resistance to interference?
 - a) Are all or some of these differences/similarities the same as those found in other types of interpreting?
- 2) What are the main differences and similarities between strategies used to cope with cognitive load by experienced, professional community interpreters and interpreting students?

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- a) Do interpreters apply different strategies for coping with cognitive load when interpreting into L1 as compared to interpreting into L2?
 - b) Are all or some of these differences/similarities the same as those found in other types of interpreting?
- 3) What is the nature of the required type-specific monitoring when interpreting dialogues as compared to other types of interpreting?

Survey of the field

Dialogue interpreting can occur in a wide array of communicative situations, whenever two people or parties need to interact but do not share a common language. Examples are political and military negotiations, police interviews, medical consultations, sign language interpreting in educational settings and everyday interaction. This project focuses on one specific kind of dialogue interpreting: it is done in the consecutive mode, with the interpreter working alternately from and into both languages spoken by the participants, hence interpreting for both parties. This is done as a professional service in various community/societal settings between representative(s) of the majority society and minority language speaker(s). Such interpreting is known by various terms, e.g. community interpreting, public service interpreting, medical/health care interpreting and court interpreting. Here, the term *community interpreting* is adopted mainly because we believe that other terms are too limited. The main interest of the project is on professionalized community interpreting, adhering to professional guidelines and codes of ethics. The project thus focuses on dialogue interpreting as performed by the community interpreter.

Community interpreting has been the focus of much research within Interpreting Studies since the 1990s. Discourse and conversation analysis have proved fruitful methods for studying interpreted encounters. Important advances have been made by researchers studying interpreted encounters in countries such as Australia (Hale 2004, 2007; Tebble 2009), Denmark (Dubslaff & Martinsen 2007), Italy (Gavioli & Baraldi 2011), Norway (Nilsen 2005), Sweden (Englund Dimitrova 1991, 1997; Wadensjö 1992, 1998), the US (Angelelli 2004, 2011), and Spain (Valero Garcés 2007). As a result of this research, the earlier assumption of the interpreter as a “translation machine”, an invisible channel in the communication process, has been convincingly refuted by researchers in different countries. Another major finding is the important role of the interpreter for managing the interaction of the encounter. Wadensjö (1992) points out that the interpreter is both translator and coordinator of the interaction. Englund Dimitrova (1991, 1997) characterizes the interpreter as the hub of the turn-taking process (cf. also Roy 1993). Through this research, the community interpreter has gained social and interactional visibility.

Despite these research advances, there has been virtually no interest in the cognitive processing of the community interpreter, that is, what goes on in her brain and how she manages the interpreting process, with the exception of our own work (Englund Dimitrova & Tiselius, forthcoming) This is unexpected, given that a focus on cognitive processing has long been quite prominent in research on other types of interpreting, for instance simultaneous conference interpreting (see, e.g., Gile [1995] 2009; Moser Mercer 1997, 2000; Englund Dimitrova & Hyltenstam 2000; Shlesinger 2000). Models and studies of simultaneous interpreting processing have been concerned with the dual task of the interpreter, involving two simultaneously performed linguistic tasks: listening/comprehension of a message in one language and transfer/production of (earlier parts of) the message in another language. Memory functions, especially working memory and its limitations, have been in focus.

Gile ([1995] 2009) proposed the so-called efforts models of interpreting, postulating that interpreting requires effort and that the available resources for this effort are limited. Hence, the different postulated efforts have to compete for available processing capacity, and problems in one of them may affect processing in another. In contrast, Seeber's (2011, 2013) recently proposed model of cognitive load in simultaneous interpreting, based upon general research into cognitive processes, assumes that the different processes need not necessarily compete for the same capacity, since parallel processing can be assumed. Timarova (2012) investigates the functions of working memory and performance in simultaneous interpreting in professional conference interpreters, and concludes that simultaneous interpreting is predominantly related to the central executive functions and that different sub-processes in simultaneous interpreting are predicted by different working memory functions (2012: 119). There is, thus, not a clear one-to-one correlation of specific working memory functions and specific sub-processes in simultaneous interpreting.

As already mentioned, however, this project concerns consecutive interpreting, which has been less studied from a cognitive view than simultaneous interpreting. Focus in earlier research has been on the interpreter's use of note-taking (Dam 2004). Community interpreters use a selective type of note taking, so findings from earlier studies on conference interpreting cannot be taken at face value.

Project description

Unlike simultaneous interpreting, the two tasks of listening/comprehension and transfer/production are not simultaneous for the community interpreter, since the interpreting is done consecutively. Therefore, dual tasking here is of a different nature: the community interpreter simultaneously translates and manages the interaction. In a model of the mental processes of the community interpreter, this double function, both to translate and to manage the interaction of the interpreted encounter, must be accounted for in cognitive terms. We propose that different kinds of monitoring are a crucial and pervasive component of this specific type of interpreting process and that a more elaborate (in comparison with other process models of interpreting) concept of monitoring may be useful to describe the specifics of the community interpreter's cognitive processes. We furthermore stress the importance of the notion of professional self-concept (Andres 2011; Muñoz 2014) for explaining the interpreter's decision-making,

Monitoring one's own utterances is characteristic of speakers in general. By monitoring (observing, evaluating, possibly correcting) our speech when speaking, we compare our utterance with our plan, detecting and possibly correcting slips of the tongue (repair), inadequacies, and so forth. Monitoring is also included in several process models of simultaneous interpreting (e.g., Lederer 1978; Setton 1999) to account for the observed fact that (simultaneous) interpreters correct their own interpreted utterances, while still also listening to continuing source utterances. Apart from such correction, empirical evidence for monitoring comes also from retrospection (see, e.g., Ivanova 1999; Tiselius 2013). Hence, we assume it also to be a component of the process of the community interpreter, but with extended functions.

The functions of the interpreter's different kinds of monitoring in the interpreted event can minimally be described as follows.

When *a primary party speaks*, the interpreter

- 1) monitors his/her comprehension of the primary party's utterance,
- 2) monitors the relation of the primary party's utterance to the interpreter's previous interpreted utterance (does it seem to have been understood by the primary party as intended?),
- 3) monitors his/her memory and processing capacity, in order to interrupt to take the turn, if necessary.

When *the interpreter speaks*, s/he

- 1) monitors his/her own utterance, as an utterance in the given language,
- 2) monitors, when relevant,¹ the relation of his/her own utterance to the primary party's previous utterance,
- 3) monitors verbal and non-verbal reactions of the primary parties.

Compared to simultaneous conference interpreting, several of these processes are specific to interpreting dialogues, for example, monitoring in relation to primary parties' previous utterances and reactions, as well as monitoring his/her own process in relation to memory and processing capacity in order to take the turn. Compared to the conference interpreter, the community interpreter is in a privileged position, since he or she can stop the speaker's flow of speech by claiming the turn from the speaker. This means that the interpreter not only monitors his/her own process, but also the co-ordination of the turn taking and the planning ahead of the interaction. The increased need for co-ordination means that the interpreter needs to plan ahead based both on the cognitive load and on the communicative event.

We further assume that several factors affect the cognitive processing of the community interpreter, such as language proficiency, working memory capacity as well as external factors, for example the other participants, acoustic qualities, or speed of delivery. Community interpreting requires advanced language competence (Hale 2007: 177) in two languages and the ability to work into both languages alternatingly. Language competencies comprise necessary linguistic competencies in both languages. However, most community interpreters have a weaker competence in one of the interpreter languages, a factor which can be assumed to influence the process, for instance regarding interpreting strategies, length of turns, and information transfer. However, to our knowledge, this has not been systematically investigated.

Contrary to other types of translation, oral and written, the interpreter's renditions in dialogue interpreting are, at the same time, (potentially) a target text of a preceding utterance, and the point of departure for the next source text, the upcoming utterance, which is in its turn in some way a response to the preceding (target) text/utterance. This gives the interpreter immediate feedback on the perception of the interpreting. Furthermore, the community interpreter's interpreting context is that of a three-party dialogue. These two conditions change the processing requirements in community interpreting as opposed to other types of interpreting by 1) changing the way source and target texts are monitored, 2) adding the increased need for co-ordination of the interaction, and 3) increasing the interpreter's need for

¹ Research on community interpreting shows that not all utterances by the interpreter are in fact renditions of a previous utterance by a primary party.

ethical awareness. These unique processing conditions also mean that traditional models of interpreting are not wholly applicable to community interpreting.

In research on simultaneous conference interpreting, an important topic has been how the interpreter allocates his or her (limited) set of attentional resources. Cognitively, the processing in community interpreting requires the interpreter's attention for a number of tasks, not only perception, comprehension, transfer and production, but also:

- deciding when to take notes, and do so in a prudent way (selectively),
- monitoring the interaction process with the conversation participants, in order to manage both that process and the cognitive interpreting process,
- managing working memory capacity (cf. Timarová 2012).

A number of external factors already found to have an impact on other types of interpreting can be assumed to be important in the context of community interpreting as well. These include acoustic quality, speed and mode of delivery of the talk, participants' accent and prosody, and the linguistic complexity of the utterances to be interpreted.

A number of speech phenomena have been used in studies of simultaneous interpreting in order to gain access to features of the cognitive processing (hesitation, false starts, filled and unfilled pauses, etc.) Such *process indicators* are important to systematically study in the production of community interpreters as well.

Method

The following methods will be used for data elicitation and analysis of the interpreter's monitoring of interaction in interpreting and more detailed functions of the interpreter's working memory:

- 1) Psychological tests measuring central executive functions of the working memory: ability to resist interference, ability to share attention between two tasks (dual tasking), ability to switch attention from one task to another (shifting). Data will be analyzed statistically. Aims to answer research question 1.
- 2) Language tests screening the language proficiency level of the interpreter's L1 and L2. Aims to contribute to answering research question 2.
- 3) Video-recordings of
 - a) semi-scripted interpreted encounters, including challenges of interpreters' skills (aggressive turn-taking, long turns, challenging terminology). Analysis: identification in recordings of process indicators. Aims to contribute to answering research questions 2 and 3.
 - b) retrospective interviews. Process indicators, categorized according to Ivanova (1999) and Englund Dimitrova & Tiselius (2009), will be analyzed. Correlation and analysis of process indicators in 3a and 3b. Aims to contribute to answering research questions 2 and 3.

Participants will be experienced community interpreters and students of interpreting. Planned language combinations: Swedish and French/Spanish. Interpreters will be recruited in the same way as for an ordinary interpreting mission and remunerated. They will agree to participate in the research project and sign an informed consent form. Initial contacts have been taken with professional interpreters who have signaled an interest to participate in the project. Students will be recruited at the interpreting training at Stockholm University, we have been in contact with potential participants, who have responded positively.

Time plan

Preparatory stage 2014–2016

In the preparatory stage a literature review was made in order to map evidence-based DI competences. Three presentations on the topic were held at international conferences, and one paper has been submitted for publication (Englund Dimitrova & Tiselius, forthcoming).

The work continues with operationalization of variables and preparation of data collection, as well as data collection for a pilot study. Transcription and analysis of pilot study is planned for autumn 2016.

Main stage 2017–2020

2017 – *Data collection, reporting at international conference, 1 article (peer-reviewed).*

The PhD student will be recruited in early 2017. The main data collection starts, as well as transcription of data. The co-operation with Australia (the MH Medical interpreting project, see below) will start with on-site data collection at Monash Health. The method and preliminary results will be reported at international conferences, and one article is planned proposing a process and competence model for community interpreting.

2018 – *Data analysis, reporting at international conference, 2 articles (peer-reviewed) + PhD article*

In 2018 transcription and analysis of data material will continue. Results will be reported at international conferences. An article of methodological issues is planned as well as an article with the psycholinguistic test results.

2019 – *Data analysis, organization of international conference, 1 article (peer-reviewed) + PhD article*

Further data analysis. Reporting of results at the international conference on process research interpreting processes that the project will organize. An article is planned of the results from the retrospection.

2020 – *Data analysis, reporting at international conference, 1 article (peer-reviewed), 1 book + 2 PhD articles*

We will analyze the remaining data in 2020. We also plan a joint publication with “MH Medical interpreting project”, Australia, as well as a book on the cognitive processes and competence of community interpreting. The PhD student is expected to finish his or her thesis late 2020.

Motivation for time planning

The project covers a new research area without previous findings. It contains two different types of data which will generate a lot of data material to be analyzed. In order to produce relevant results, a time period of four years is necessary.

Project organization

Elisabet Tiselius: PhD (2013) on cognitive processes and expertise in conference interpreting. Senior lecturer (100 %) at the Institute for Interpreting and Translation Studies, Stockholm University. Experience of both qualitative and quantitative data collection and analysis. Role in the project: project leader; data collection, analysis, and reporting of scientific results.

Birgitta Englund Dimitrova: Professor emerita of Translation Studies, focus on cognitive processes in translation and interpreting. Experience of both qualitative and quantitative data collection and analysis. Role in the project: senior advisor; data collection, analysis, and reporting of scientific results.

PhD student: To be recruited in Translation Studies. Role in the project: data collection, analysis, and reporting of scientific results.

Non-research personnel

Staff for coordinating video recordings and providing technical and administrative support during data collection and analysis as well as administrating project matters and project reporting, equivalent to 20 % of full time.

Significance for the research field

The current project is, to our knowledge, the first major research project, internationally, on the cognitive processes involved in interpreting dialogues. Furthermore, there is very little research into the cognition of consecutive interpreting in general, and this project will generate valuable knowledge. Cognition and working memory are prominent areas in process oriented interpreting/translation research but has so far not been dealt with in community interpreting or the larger area of dialogue interpreting. Existing models of community interpreting are experienced based and developed by practitioners, our model will be the first to be research based and empirically tested. Both researchers in this project are part of international networks that study the cognitive processes of interpreting and translation.² The project has already garnered interest in the international research community, and we believe that it has the potential to open up a whole new area of research.

The results of this project will help us better understand a cognitively very demanding activity, and will be of relevance both to studies on cognition generally and to interpreting studies. They will also contribute to an increased societal visibility of a crucial professional practice and have important implications for the future development of interpreter training.

Preliminary results

As described under the time plan, we have developed a preliminary evidence-based model of interpreting competence where we postulate that the necessary basic competences for community interpreting are general and specific background knowledge, language knowledge, interpreting skill, and professional self-concept. In this model we also posited that the interpreting skill is the competence where different cognitive aspects crucial for interpreting dialogues, such as monitoring, would be investigated.

Equipment

The Institute for Interpreting and Translation Studies at Stockholm University has access to the laboratory of multilingualism at the Department for Swedish Language and Multilingualism, which has state-of-the-art equipment for psychological and psycholinguistic testing. Furthermore, we have access to the necessary recording devices through the department.

² See <http://pagines.uab.cat/trec/>.

International and national collaboration

The project has a planned cooperation with the project “MH Medical interpreting project” led by Dr. Helen Tebble and Dr. Jim Hlavac at Monash University, Melbourne, Australia, which conducts similar research, but not on cognitive processes. Sweden and Australia has a similar structure for interpreters as Sweden, therefore we hope to broaden the validity of our results with different country and languages. The projects exchange interpreting and psychological test data in order to enlarge our sample. A joint publication is planned.

We also co-operate with Dr. Šarká Timarová, at K.U. Leuven, who developed the psychological testing battery for working memory in simultaneous interpreting and who is willing to share and adapt the test battery as well as her her psychological testing knowledge with us.

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