The influence of contextual knowledge on time lag and prediction in simultaneous interpreting

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THE INFLUENCE OF CONTEXTUAL KNOWLEDGE ON TIME LAG AND PREDICTION IN SIMULTANEOUS INTERPRETING

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Abstract

Context is important for simultaneous interpreting. The aim of the present Masters' thesis was to observe the influence of context on simultaneous interpreting. Therefore, a study was conducted, in which 15 student interpreters of the Spanish, French and Italian booths were asked to interpret two different speeches. While the interpreters were familiar with the context of one of the speeches, they were not at all familiar with the context of the other one. The aim of this experiment was to find out whether time lag was shorter in the interpretations of the speech with the familiar context than in the interpretations of the one with the less familiar context. The results showed that contextual knowledge does aid in keeping a shorter time lag. Furthermore, the study provided evidence that contextual knowledge helps in reducing errors. However, participants did not produce a word in the target language before hearing the same word in the source language speech, so I cannot conclude that prediction took place.

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1. Introduction

1.1.   Overview

Rem tene, verba sequentur – Grasp the point and the words will follow (Marcus Porcius Cato). *Interpreters are communicators! Don't just translate the words, you must convey the message of the speech!* – how often have we interpreting students heard statements like these in the course of our Masters' program? Hundreds of times probably. But what do they mean exactly? I assume that our professors wanted us to understand that as future interpreters we are responsible for successful communication across different languages. But how can we be successful communicators? One element leads back to the quote by Cato in the beginning. By understanding the point the speaker would like to make and not only the words themselves, the interpreter can convey the message in the target language much more accurately and efficiently.

Simultaneous interpreting is an interesting field for scientific research since it is a highly complex task involving several different cognitive and neuropsychological parameters. Therefore, those interested in the field include both interpreting scholars (such as Seleskovitch, 1978; Moser-Mercer, 1997; De Groot, 1997) and cognitive psychologists and psycholinguists (such as Oléron & Nanpon, 1965). According to Gile (2018), one of the earliest and most popular interpreting theories was developed by Danica Seleskovitch and Marianne Lederer in the early 1970s. This theory shows that the interpreter first hears the source utterance, then understands the message, which they subsequently deverbalize, i.e., separate from the words used in the source speech. The interpreter then reformulates the message naturally in the target language. Gile (2018) argues that the theory of total deverbalization has been criticized. However, it is widely accepted that meaning is of greater importance for the interpreting task than linguistic transcoding. According to Schweda-Nicholson (1987), phonetics, syntax and semantics contribute to the meaning of a speech. However, they are largely insignificant compared to the context in which an utterance occurs. Schweda-Nicholson (1987, p.194) states that "context is a strong determinant of how the syntactic and phonological patterns of utterances are perceived, analyzed, and understood."

To live up to the task of guaranteeing successful communication across languages, the interpreter needs to make use of certain strategies. One strategy, which scholars agree is essential for interpreters, is prediction, in other words the pre-activation of parts of an utterance before they occur (Amos & Pickering, 2020). Some researchers use the term

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anticipation (Riccardi, 2005; Seeber, 2001). For reasons of uniformity, this thesis will only use the term prediction. Most interpreting scholars agree that prediction is an important concept within the field of interpreting research. Prediction in interpreting, much like in other contexts of life, means anticipating a possible outcome based on one's knowledge and experience (Seeber, 2001). Another strategy for successful interpreting is the monitoring and adaptation of one's décalage, in other words the time lag between the source speech input and the interpreting output (Riccardi, 2005). This Masters' thesis will therefore look at the intersection of these two strategies, while taking the importance of familiarity with the context into account.

1.2.   Research question and hypotheses

How does knowing the context and therefore the ability to predict the continuation of the source speed influence the time lag? In the present Masters' thesis, I will try to answer the following research question and hypotheses:

Research question: Is the time lag shorter if interpreters are familiar with the context of the speech they are interpreting?

Hypotheses:
1. When presented with a speech where the interpreters are familiar with the context, they will be able to keep a shorter time lag than when they are presented with a speech where they are not familiar with the context.
2. In the interpretation of the speech where the interpreters are familiar with the context, the interpreters will at times be able to utter chunks of information before the speaker does (true prediction).
3. In the interpretation of the speech where the interpreters are not familiar with the context, no cases of true prediction will occur.

1.3.   Objectives and aims of this study

This Masters' thesis aims at observing the influence of familiarity with the context on time lag during simultaneous interpretation. To provide the context in which this study is situated, I will provide an overview of existing literature and studies in the field of simultaneous interpreting, prediction in general and prediction in simultaneous interpreting. I will also expand on the role of time lag in simultaneous interpreting, the role of strategies in simultaneous interpreting and the importance of context in simultaneous interpreting. Furthermore, I will touch upon

errors in simultaneous interpreting (see chapter 2). Based on the elements presented in the literature review, I will then explicate the methods used for the experiment, which aims to provide evidence that familiarity with the context of a speech, and therefore the predictability of the speech, influences time lag (see chapter 3). In chapter 4, I will discuss the data from the experiment and their analysis. Finally, I will conclude with a discussion of the results (see chapter 5) and a conclusion (see chapter 6).

2. Literature review

The following chapter will discuss relevant literature in the fields of general interpreting studies and simultaneous interpreting studies. It will explore prediction in comprehension and in simultaneous interpreting, as well as time lag, the use of strategies, and errors in simultaneous interpreting.

2.1.   Simultaneous interpreting

This Masters' thesis looks at simultaneous interpreting, more precisely at prediction and time lag in simultaneous interpreting. According to Gile (2018), there are two modes of interpreting – consecutive, in which the speaker produces an utterance and then pauses so that the interpreter can translate it, and simultaneous interpreting, in which the interpreter produces their speech while the interpreted speaker is speaking, with a lag of up to a few seconds. In consecutive interpreting one distinguishes between long consecutive, in which the utterance by a speaker can take up to a couple of minutes while the interpreter takes notes, and short consecutive, in which the utterance is shorter, and the interpreter does not take notes. In the simultaneous interpreting mode, the subcategory simultaneous with text also exists. Here, the interpreter is provided with the text of a speech before the speech is pronounced (Gile, 2018). According to Hodzik and Williams (2022, p.357) "simultaneous interpreting is a highly complex process that places exceptional demands on memory and processing." The present thesis will focus on the simultaneous mode alone.

2.2.   Prediction

2.2.1. Prediction in comprehension

Speech prediction is part of our everyday conversational culture. In fact, researchers have shown that comprehenders often predict probable utterances. They use context to make predictions about the world and then compare those predictions to the situation as they find it later (Gambi & Pickering, 2018). Prediction can be an aid to language comprehension. By predicting an upcoming utterance or even elements thereof, language comprehension is made easier.

What is prediction? Amos and Pickering (2020, p.706) define prediction as the "pre-activation of any aspect of an utterance". They state that this pre-activation happens before the comprehender hears that utterance. According to Chmiel (2021, p.19) prediction therefore "involves the activation of a linguistic item before its perceptual input."

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What can be predicted? Specific words that are highly predictable are rare, but some words are moderately predictable from context (Luke & Christianson, 2016). Moreover, various aspects of speech such as grammar, sound and meaning can be predicted (Pickering & Gambi, 2018). A number of different aspects of an utterance can be predicted, as shown by various scientific researchers through event-related (brain) potential (ERP) and eye-tracking studies. Predictions can be made at a syntactic (grammar), phonological (form), and semantic (meaning) level (Pickering & Gambi, 2018). Wicha et al. (2004) recorded their participants' ERPs to an article and a noun in Spanish. The noun either matched the preceding article in gender or not. Their findings showed that readers predict the gender of both articles and nouns and use gender in real time to maintain agreement as well as to form sentence meaning. Altmann and Kamide (1999) tracked their participants' eye movements while they were shown a visual scene with a boy and a cake, along with various distractor objects. At the same time, they heard sentences such as "the boy will move the cake" or "the boy will eat the cake." The participants' eyes moved to the image of the noun "cake" faster when presented with the verb "to eat" than when presented with the verb "to move," the cake being the only edible object. This shows that the participants used the verb "to eat" to anticipate the noun "cake." DeLong et al. (2005) researched a phonological regularity of English indefinite articles ("a" and "an") by carrying out ERP recordings. They found that readers use words in a sentence to predict upcoming words.

How do comprehenders make predictions? Various researchers have shown that people make predictions using the production mechanism during comprehension. This type of prediction is known as prediction-by-production. We can understand a speaker even if their sentence is not complete because we complete their utterances in our mind using our language production system (Pickering & Gambi, 2018). Martin et al. (2018, p.1) have provided "the first direct evidence that the availability of the speech production system is necessary for generating lexical prediction during sentence comprehension." Their results explain why we need our language production during comprehension. Amos and Pickering (2020) agree that the comprehender makes use of their production mechanism during the comprehension phase. The comprehender then completes the speaker's words themselves (without uttering them) as if it were their own speech. The preceding findings discuss monolingual language comprehension and prediction. However, in simultaneous interpreting there are always two languages involved. Amos and Pickering (2020) have collected evidence from scientific research that shows that prediction-by-production takes place even across languages.

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2.2.2. Prediction in simultaneous interpreting

Prediction features in one of the earliest simultaneous interpreting process models by Moser (1978). It appears quite late in the flowchart of the model because according to Moser-Mercer (1997, p.179) "prediction on future input is not possible without having already processed a certain amount of prior information." She is convinced that prediction is a central element in both consecutive as well as simultaneous interpreting. Setton (2005) agrees with Moser-Mercer and states that the ability to predict is a prerequisite for being a successful simultaneous interpreter. Simultaneous interpreting is a highly complex task and can, according to Chmiel (2021, p. 18), "be considered to be an extreme case of bilingual processing." The interpreter not only has to comprehend and process the source speech, but they also have to translate the former into their target language and produce the utterance. To achieve this task the interpreter needs to process language very quickly and efficiently. Therefore, they use lexical prediction, they analyze a sentence and predict possible word matches (Chmiel, 2021). Prediction is helpful for comprehension because comprehension is simplified if the comprehender tries to anticipate elements of what is about to be said (Amos & Pickering, 2020). In simultaneous interpreting, the interpreter listens to an utterance and translates it into another language at the same time. Language comprehension is therefore fundamental for simultaneous interpreting. Moreover, Pickering and Gambi (2018) state that

> traditionally, most cognitive and perceptual psychology assumes that people deal with the world as they encounter it. More recently, however, researchers have proposed that the brain's fundamental computations are prediction and assessment of those predictions. (Pickering & Gambi, 2018, p.1002)

Sometimes the interpreter can utter a part of the speech even before the speaker of the interpreted speech does so. According to Setton (1999), this sort of prediction is possible because the interpreter might identify the beginning of a familiar linguistic structure, such as an expression or a figure of speech or they can make a prediction based on their extralinguistic knowledge. Therefore, in line with Setton (1999) prediction can be classified into linguistic and extralinguistic prediction. Furthermore, the interpreter's ability to predict improves over the course of a speech. As the speech unfolds, they learn more about the speaker and can understand them better until "gradually, almost imperceptibly, for the duration of the speech, the interpreter slips into the speaker's mind" (Van Dam, 1989, p.173).

Why is prediction of importance for simultaneous interpreting? Prediction is essential because the ability to use context to determine probable words could support interpreting performance (Amos & Pickering, 2020). According to Chernov (2004), such prediction, which

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he calls "probabilistic prognosis," is what makes it possible to interpret despite the cognitive pressure involved in the task. Studies have found that interpreters speak and listen at the same time for about 70% of the time of a source language speech (Chernov, 1994). Therefore, being able to predict what is about to come provides several advantages for interpreters: the lag between the speaker's and the interpreter's utterances can be kept shorter, and the interpreter has to rely less on their memory and can concentrate on their own production (Amos & Pickering, 2020). Prediction has further advantages for the interpretation between language pairs which are structurally asymmetric, such as from German into English. According to Wilss (1978, p.344), "structural asymmetries can lead to considerable transfer problems." Prediction can therefore facilitate the task. As reported by Setton (1999) differences in the word order between the source language and the target language have been the subject of several simultaneous interpreting research projects and are viewed as a great challenge. In these language combinations, interpreters must sometimes choose between waiting for some elements of the sentence in order to fully understand the sentence and then be able to utter their interpretation and make a prediction. Subordinate clauses in German, for example, have main verbs at the end of the clause, the structure is therefore subject-object-verb (SOV). If an interpreter working from German into a language with a subject-verb-object (SVO) structure, they cannot utter the verb in the target language until they have heard the whole object in German, which can sometimes take quite a long time (Seeber, 2011). If the object in German is a very long clause, this can mean a huge load for working memory. However, the interpreter can try to predict the German verb and can therefore utter it in English and proceed with the object. This reduces the demand on memory as well as the time lag (Amos & Pickering, 2020).

What happens when an interpreter produces an utterance based on an erroneous prediction? Incorrect predictions can lead to additional cognitive efforts as the interpreter has to both correct their previous utterance and focus on the new input, as well as potentially additionally revising the planned utterance (Amos & Pickering, 2020). However, Luke and Christianson (2016) as well as Frisson et al. (2017) have found out that wrong predictions in reading do not lead to a processing cost. Based on visual world paradigm and other studies, Amos and Pickering (2020) concluded that it is a processing advantage for simultaneous interpreters to be able to predict and decide whether to act on these predictions. They highlight the advantages of prediction in comprehension during simultaneous interpreting. according to Chernov (1994). They also underline the lack of evidence of a processing cost for erroneous predictions according to Frisson et al. (2017). In addition to that, Dell and

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Chang (2014) have provided evidence that prediction errors drive learning and that on these grounds the same or similar errors can be reduced in future situations.

2.3.　　　Time lag in simultaneous interpreting

In simultaneous interpreting, the speaker and the interpreter provide utterances concurrently, but the corresponding sets of information are not given at the exact same time. Moreover, the interpreter does not repeat what they are hearing in the moment, instead they repeat what they have heard shortly before (Kalina, 1998). The time lag, also known as the ear-voice span (EVS) or décalage, is the latency between these two elements. Time lag can also be defined as the smallest amount of time the interpreter needs to process information under heavy cognitive processing (Lee, 2002). One might think that time lag is a fixed quantity and that it is always of the same length, but this is far from the truth. It is not continually the same during an interpretation and the interpreter should not strive for this (Bartłomiejczyk & Stachowiak-Szymczak, 2022). Time lag is elastic, and its length can be managed. However, there are cases of a so-called forced time lag, when the source speech is too fast for the interpreter to keep up, they cannot actively manage or adjust their time lag any more, and it is imposed on them. This problem often manifests itself in the case of novice interpreters. They cannot keep up with the speed or the density of the source speech and are therefore forced into a longer time lag than they can handle. They then fall behind the speaker and lose the thread of meaning (Camayd-Freixas, 2011). Time lag is useful for the interpreter in order to analyze information (Riccardi, 2022). According to Timarová et al. (2011, p.121), "time lag provides insight into the temporal characteristics of simultaneity in interpreting, speed of translation and also into the cognitive load and cognitive processing involved in the translation/interpreting process." Therefore, they state that measuring the time lag can be of importance for process-oriented research. Several studies have shown that time lag in simultaneous interpreting depends on syntactic constituents and averages out at 2 to 6 seconds or 5 to 10 words but can be up to 10 seconds at specific points during a speech (Lee, 2002; Timarová, 2015). However, at about 4 seconds a loss in accuracy can be identified (Timarová, 2015). In case of true prediction, time lag can even be negative, which means that the interpreter utters elements of the speech before the speaker does so. According to Timarová (2015), research has been carried out comparing the time lag in shadowing and in simultaneous interpreting. The results provided evidence that the time lag in simultaneous interpreting was 1.5 times as long as the time lag in shadowing. These findings show that time lag reflects cognitive processing, and we can therefore deduce that time lag increases with the difficulty of the task. The interpreter, however, has a very limited

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amount of time to carry out their task. They have to process information very fast or risk omissions since, as mentioned above, at a time lag of around 4 seconds the interpretation loses accuracy (Timarová, 2015). Researchers assume that time lag is determined by internal (processing) factors, such as strategies or segmentation of the input. However, there currently is not a lot of evidence for this (Timarová et al., 2011). The minimum lag an interpreter can keep is determined by the speed of their processing, whereas the maximum lag depends on the interpreter's available memory resources (Timarová, 2015). Lee (2002) has shown that a long time lag has a negative effect, not only on the quality of the sentence which is being processed, but also on the processing of the sentence that follows. Nevertheless, too short a time lag also has its disadvantages. According to Camayd-Freixas (2011), maintaining the lag constantly at a minimum can be stressful, which leads to early fatigue. Moreover, the risk of errors and therefore self-corrections grows, which is unpleasant for the listener. Finally, by staying too close to the speaker the interpreter's delivery rate might become irregular and uncomfortable to listen to. A good interpreter makes use of the opposite strategy, they increase their time lag by stopping and listening for two or three seconds. This allows them to grasp and render the meaning of the source speech instead of repeating the words. They are able to apply this strategy by using shortcuts, they cut out redundancies without omitting crucial information. Interpreters need to manage their time lag because they must adapt to changing interpreting situations in order to render the thread of meaning. It is therefore of utmost importance that the interpreter stay flexible and be able to strategically manage their time lag in order not to fall behind. The experienced interpreter is able to find their personal comfort zone (Camayd-Freixas, 2011).

2.4.   The use of strategies or tactics[1] in simultaneous interpreting

Interpreters make use of different strategies in order to complete the interpreting task. According to Riccardi (2022) strategies are

> possible solutions applied by interpreters to counteract the limits imposed by cognitive processing mechanisms and the communicative situation, and to convey the original speech in the target language when confronted with increased delivery speed, high information density, non-native accents or different language structures. Riccardi, 2022, p.374)

Strategies are therefore possible coping mechanisms to overcome restrictions and limitations of the interpreting situation and can be divided into different categories. Why do interpreters need strategies? For text processing in interpreting situations, the development of special strategies is required. These are either based on strategies and behaviors acquired in

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[1] See Gile (2015) and Setton & Dawrant (2016) for the distinction between the two terms.

monolingual text processing or they must be newly acquired. Strategies for monolingual text processing are not sufficient for the very complex task of simultaneous interpreting (Kalina, 1998). Moreover, if a specific strategy is successfully repeated, it becomes automated, which then reduces the cognitive load of interpreting (Bartłomiejczyk, 2006). Interpreters make particular use of strategies when they have to cope with processing capacity overload. This overload can be triggered by various factors, such as high delivery speed or information density, propositions with several subordinate clauses, parenthetical elements, numbers, proper names, long lists or idiomatic expressions (Riccardi, 2022). Riccardi (2005) distinguishes between skill-based and knowledge-based strategies. Skill-based strategies are all strategies which the interpreter has internalized and applies automatically. They are triggered by a known stimulus within the interpreting situation. Coping with greetings and thanks is an example of skill-based strategies. The interpreter knows these situations well and can make use of their prepared phrases to interpret these utterances. Knowledge-based strategies differ from skill-based strategies because they are activated after a conscious analytical process. They are important when the interpreter cannot make use of automatisms and has to actively plan their upcoming actions. The reasons for which the interpreter has to use one of these strategies could be a fast delivery rate, a very dense speech or the use of unknown concepts or terms (Riccardi, 2005).

Generally, the most common categories are comprehension, production, general strategies and emergency strategies. According to Riccardi (2005; 2022) prediction, segmentation of the source speech, selection of information, stalling or waiting, and time lag are all comprehension strategies. Production strategies include compression, expansion, approximation, and generalization, as well as the use of pauses and intonation. Time lag and monitoring are overall strategies and the omission of certain elements, transcoding and parallel reformulation count as emergency strategies. Riccardi (2022) elaborates on strategies and talks about comprehension strategies and strategies for overcoming restrictions and limitations. According to Bartłomiejczyk (2006), comprehension strategies are of utmost importance because without them the whole interpreting task is at risk of failing.

Gile (1995) distinguishes between three different types of tactics: comprehension tactics, preventive tactics, and reformulation tactics. The comprehension tactics he identifies are delaying the response, reconstructing the segment with the help of the context, using the boothmate's help, and consulting documents in the booth. Preventive tactics are taking notes, changing the EVS, segmentation and changing the order of elements in an

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enumeration. Delaying the response, using the boothmate's help, and consulting documents in the booth are also reformulation tactics. They are complemented by replacing a segment with a superordinate term or a more general speech segment, explaining or paraphrasing, reproducing the sound heard in the source-language speech, instant naturalization, transcoding, informing delegates of an interpretation problem, referring delegates to another information source, omitting the information, parallel reformulation and switching off the microphone.

Kalina (1998) also provides a very detailed classification system of interpreting strategies. She divides them into strategies aiding comprehension and production, as well as global strategies, such as monitoring. Kalina (1998) also stresses the fact that the different interpreting strategies are highly interdependent, creating a sort of net of strategies.

Bartłomiejczyk (2006) also mentions stylistic and presentation strategies, which do not aim at overcoming difficulties but reaching the communicative goal.

2.4.1. The selection of the right strategy

Riccardi (1998) states that the interpreter always choses the strategy which provides them with the most possible linguistic solutions, i.e., the strategy of "least commitment." The interpreter always tries to avoid maneuvering themselves into a one-way solution. Gile (1995) writes that the selection of tactics never happens at random. He has developed a set of rules which interpreters generally follow, either consciously or unconsciously. According to these rules, tactics should allow the interpreter to maximize information recovery for the listeners, to minimize interference between recovery of the affected speech segment and the transmission of neighboring segments and to maximize the communication impact of the speech.

2.4.2. The use of time lag as a strategy

According to Gile (1995), the adjustment of the time lag is a preventive tactic. Moreover, he sees the delaying of the response as a comprehension tactic (1995). He states that when interpreters have trouble understanding they can delay their interpretation for a fraction of a second up to a couple of seconds. They therefore adjust their time lag hoping for more information from the speaker while they wait. This tactic can therefore also be seen as an adjustment of the time lag, which would then be both a comprehension as well as a preventive tactic. This tactic can, however, lead to a loss of speech segments because of the

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high dependency on short-term memory (Gile, 1995). Gile (1995, p.195) argues that "by changing the Ear-Voice-Span (EVS) interpreters can control to a certain extent the processing capacity requirements for individual Efforts." The interpreter can purposely lag further behind. This means a greater strain on short-term memory but increases comprehension potential. They can also shorten time lag to decrease short-term memory requirements. However, a shorter lag also minimizes prediction potential and misunderstandings are more likely (Gile, 1995).

2.4.3. The use of prediction as a strategy

Research suggests that prediction is a comprehension strategy (Riccardi, 2005; Kalina, 1998; Bartłomiejczyk, 2006). Depending on the language pair, the interpreter depends heavily on this strategy for their production (e.g., from German into English, see chapter 2.2.2). However, according to Jones (2002), this strategy can be useful for all source languages and is a very precious tool. In order to make use of this strategy, the interpreter has to strategically monitor whether the source text elements uttered after the corresponding target text elements are correct. If an utterance based on a wrong prediction has been produced, the interpreter has to fall back on corrective or emergency strategies. Prediction as a strategy can lighten the load on the working memory. However, it poses a certain risk which has to be countered with a great deal of cognitive effort (Kalina, 1998). Furthermore, this strategy cannot be automatized like other strategies (Kalina, 1998).

2.5.   The importance of context in simultaneous interpreting

According to Setton (2006, p.376), a context in the communication setting is "a cognitive construct, a set of premises used in interpreting an utterance which is a subset of the hearer's assumptions about the world." Furthermore, it is, according to Sperber and Wilson (1995)

> not limited to information about the physical environment or the immediately preceding
> utterances: expectations about the future, scientific hypotheses or religious beliefs,
> anecdotal memories, general cultural assumptions, beliefs about the mental state of
> the speaker, may all play a role in interpretation. (Sperber & Wilson, 1995, pp.15-16)

Contextual and general knowledge are essential for interpreters and these elements are therefore also featured in Moser's simultaneous interpreting process model (1978). The interpreter is highly dependent on access to immediate context and to their audience's inferential abilities. The reason for this is that the interpreter's choice of stimulus is very limited in a simultaneous interpreting situation (Setton, 2006). Setton (2006, p.37) emphasizes that "real-time access to the shared, unfolding context is a necessary condition

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for SI." An interpreter needs to share the time, place and direct experience of the speaker they interpret in order to be able to simultaneously interpret a speech. Only context makes simultaneous interpretation feasible (Setton, 2006). The use of context and general knowledge comes into play in the comprehension phase. This is when interpreters make use of top-down processing by using their background knowledge (Lee, 2002). Seleskovitch (1978) writes that pre-existing knowledge is a technique of analysis and enables the understanding of the original speech. In Gile's (1995) classification of different interpreting tactics, context is of importance for the comprehension tactics, one of which is "reconstructing the segment with the help of the context." If the interpreter has not heard, understood or has forgotten elements of the original speech, they can fall back on their background knowledge and their understanding of the context, trying to reconstruct the missed segment. The same applies to Riccardi's (2022) emergency strategy and Gile's (1995) reformulation tactic "parallel reformulation." In this case, the interpreter realizes that they are not repeating the original message. Therefore, they utter something that seems probable considering the context and their knowledge on the topic.

2.5.1. Does familiarity with the context reduce the time lag?

Camayd-Freixas (2011) writes that the more familiar the interpreter is with the topic, the less new information they find in the source speech. They can therefore process that information faster and render a smoother and more accurate interpretation. Since, consistent with Lee (2002), we have defined time lag as the "smallest amount of time the interpreter needs to process information under heavy cognitive processing" (see chapter 2.3) it can be deduced that familiarity with the subject matter reduces the time needed to process information and therefore also the time lag between the source speech and the interpretation.

2.5.2. Does familiarity with the context aid prediction?

Knowing the immediate context of a source speech allows for semantic prediction. It does not only allow the prediction of the upcoming sentence but also the general direction in which the speaker is going (Camayd-Freixas, 2011). According to Van Dam (1989), the more the interpreter knows about the speaker beforehand and learns during the speech from verbal and non-verbal cues, the better they can understand what is being said and therefore predict the upcoming speech. Furthermore, De Bot (2000) writes that pre-existing knowledge of the context of a speech allows the interpreter to choose the most salient units of meaning. The better the interpreter knows a topic, the more accurate their prediction will be. Beaugrande and Dressler (1981) introduced the concept of contextual probability. They argue that it is not

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crucial how often parts of speech occur together but "what classes of occurrences are more or less likely under the influence of systematic constellations of current factors" (Beaugrande & Dressler, 1981, p.140). This means that the context of the speech must be taken into consideration in order to form a prediction of an upcoming utterance. Moser-Mercer et al. (2000) also state that interpreters need to engage in a certain amount of prediction and that an expert interpreter therefore needs to have a wide general knowledge.

2.6. Errors in simultaneous interpreting

2.6.1. Does familiarity with the context reduce interpretation errors?

According to Russel (2008) familiarity with the context aids in reducing errors. She states that "the risk of errors and miscommunication increases when the content or context is challenging to the interpreter […]" (Russel, 2008, p.160).

2.6.2. Does experience help reduce interpretation errors?

Different scholars have provided evidence that more experienced interpreters commit fewer errors than novice or amateur interpreters. A study by Lee (2011) has shown that experienced interpreters are more likely to provide a more accurate interpretation of essential information. Especially when these ideas are difficult, i.e., ideas which demand knowledge of the topic. Barik (1994) has tested six participants in a study on *omissions*, *additions* and *errors and substitutions* (see 4.1.2 for the definition of these terms). Two of them were fully qualified professional interpreters, two were student interpreters, who had only recently completed their interpreting program, and two were amateur interpreters, who were bilingual but had no professional interpreting training. After the conduction of the experiment, three of the participants were classified as "more-qualified", i.e., the two professional interpreters and one of the student interpreters. The other three participants were classified as "less-qualified." In the testing part of the *omissions* the "more-qualified" group omitted between 5 and 10% of the material and the "less-qualified" group omitted 20 to 25% of the material. The two groups also showed a significant difference concerning the "seriousness" of the *omissions.* While the "more-qualified" group omitted minorly important information 80% of the time and only 20% of the time committed "serious" *omissions*, the *omissions* made by "less-qualified" interpreters were "serious" in 50% of the cases. Only very few cases of *addition* were recorded. However, Barik (1994, p.133) states that "there is possibly a tendency on the part of the more-qualified or professional [interpreters] to add more material than the less-qualified [interpreters]." As to the *substitutions and errors,* the "more-qualified" group made about 3 errors per 100 words, whereas "less-qualified" group committed 4 errors per 100

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words. Barik (1994, p.135) relativized this number by indicating that one "less-qualified" showed "an anomalously low error index." Moreover, "less-qualified" interpreters omitted more information than the "more-qualified" group and had therefore fewer chances to commit errors.

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3. Research design and methods

As outlined in the literature review, being familiar with the context of the source speech can aid in rendering a smoother and more accurate interpretation. In order to see if the familiarity with the context of a speech influences the interpreter's time lag, I decided to design and conduct an experiment. The aim of the experiment was to find out whether contextual knowledge influenced time lag in simultaneous interpretation. I compared time lag in two speeches. The participants were likely to be more familiar with the context of one of the speeches than the other.

3.1. Materials/Stimuli

3.1.1. Speeches

I designed two speeches for this experiment. One speech was about a current topic, namely the ongoing war in Ukraine. The other discussed a historical event, namely the wars between the Old Swiss Confederacy and the Austrian dukes between the 13th and the 16th century. The speeches were designed to be syntactically and lexically as similar as possible, creating two comparable and feasible interpreting situations. The two speeches each contain 20 sentences (and both contain exactly 248 words), which were aligned in terms of the number of words per sentence as well as "difficult elements", such as numbers and enumerations (Dawrant & Han, 2022). The speeches were read out by a native American English speaker unknown to almost all the participants except for one. He was recorded on video. The participants could therefore see the speaker on their screen during their interpretation, mirroring the conditions in which they usually train. This is also the preferable option for any interpreting situation in general. There was a pause of 5 seconds between each sentence. Although separating the sentences made the experiment a slightly less natural interpreting setting, I took this decision deliberately so as to make sure that the participants interpreted the sentences accurately without skipping words or entire sentences. For each sentence, a keyword or a group of keywords were defined, at which point time lag was measured between the very beginning of the word in the original and the very beginning of the word in the interpretation. The keywords of the corresponding sentences always shared certain properties and/or were located at the same point in the sentence (beginning, middle, end). In sentences 1 and 8, the keywords were identical ("war"). In sentence 2, they were both years (2014 and 1511). The keywords in sentences 3, 5, 14 and 15 were located at the very end. In sentence 4, the keywords were both nouns of a similar lexical field ("region" and "territory") and they were situated in the middle of the sentence. The keywords of sentence 6 were the last element in a list of three countries and three cities respectively. In sentence 7, the

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keywords were countries. In sentence 9, the keywords or the group of keywords respectively were nouns and were located at the very end of the sentence. The group of keywords in sentence 9 was "World War II", which does not follow the same word order in Romance languages (see chapter 3.2.3. for all the groups of keywords and explanation for the measuring of the time lag). The common element of the keywords in sentence 10 was their location right after a number. The keywords in sentence 11 were synonyms ("ceasefire" and "armistice") and they were also the keywords in sentence 12. Proper names (people) were the keywords in sentence 13. A demonym and a demonymic adjective were keywords in sentence 16. In sentence 17, verbs were the keywords, and they were situated almost at the end of the sentence. A further common element of sentences 17 was the information density, which was higher than in the rest of the speech. In sentence 18, the keywords were in the middle of the sentence. In sentences 19 and 20, the keywords, or the group of keywords respectively were nouns in the middle of the sentence. See appendix B for the full list of stimuli with keywords in bold.

3.1.2. Questionnaire

A second, related aim was to see whether context affected the perceived ease with which student interpreters simultaneously interpreted a speech. Therefore, the participants were also asked to fill in a questionnaire (see Appendix C) in order for me to receive their self-assessment of their interpretation and maybe further insight into their perception of the two speeches and their interpretations. The participants were asked to provide answers to the following questions:

- What is your language combination?
- Do you think that one of the speeches was easier to interpret?
- If yes, which one?
- Why do you think it was easier for you?

3.2. Experiment

3.2.1. Participants

Fifteen students at the University of Geneva took part in the experiment. At the time of the conduction of the experiment six of the participants were in their second semester of the MACI program and nine participants were in their fourth semester. They had been practicing simultaneous interpreting for approximately four months or one year and four months respectively. They were native French, Spanish and Italian speakers and had these languages as an A language. English was in their language combination as a passive or

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retour (C or B) or as a second A language. These participants were chosen because their A languages were all Romance languages and therefore syntactically comparable. In addition, there were similar numbers of students in each booth in the MACI program at the time of the writing of this thesis. Students of the MACI program with other A languages such as German, Russian, and Arabic were not considered for the experiment for various reasons. These languages are either syntactically not comparable to the others or use a different alphabet. Furthermore, in these booths there was not a comparable number of students in the first and the second year programs. The participants all participated in this study on a voluntary basis.

3.2.2. Procedure

All the students of the French, Spanish and Italian booths were invited to participate in the experiment and were asked to fill in a form in order to find several different dates to conduct the experiment. Finally, the experiments were conducted on eight different dates. Between one and four students participated on each date.

On the day of the experiment, the participants were welcomed to one of the interpreting rooms at the University of Geneva – Uni Mail building equipped with interpreting booths and the interpreting program *Televic Education interpreterQ*. With the help of a previously composed checklist (see Appendix A), I made sure that the participants received all the necessary information and that every experiment session was organized identically. The participants were not informed about what the analysis would focus on before the experiment. They were briefed about the procedure of the experiment and then they took their seat in the interpreting booths. After a soundcheck, the first activity started, and the participants interpreted the first speech. Eight participants started the experiment with the speech about Ukraine and seven with the one about the Old Swiss Confederacy. *Televic Education interpreterQ* recorded the interpretations and the original speech on two separate tracks. After the first exercise was completed, I exported and saved all the recordings and two minutes later the second activity was started. When the second exercise was finished, the participants came out of the booths and were asked to fill in the questionnaire. I collected the questionnaires and if the participants were interested, I informed them about the focus of this thesis and the procedure of the analysis. Some participants also provided some oral feedback about the experiment in general or on the different speeches, which I gladly accepted and wrote down (see Appendix F). The participants were asked not to tell students who had not yet taken part in the experiment about the details of the experiment or the speeches so as not to skew the results of the experiment. I then thanked the students for

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participating and the experiment was over. This procedure was repeated identically for each experiment session.

During the experiment session of participants 6 and 7, as well as during the experiment session of participant 12, there was each time a short moment of technical difficulties, which led to short interruptions of the source speech videos. However, the participants stayed in their booths and the interruptions did not occur at crucial moments during the speech (during the five second pause and at the end of a source sentence, where the keyword had already been uttered).

3.2.3. Extraction of the data

The experiment resulted in 30 MP3 audio files with the source speech and the participants' interpretation on two separate tracks. Each file was then exported into *Garage Band 10.4.6* for the extraction of the data. First, time stamps at the onset of the utterance of the pre-defined keywords were manually applied onto the source speech track and then added into an Excel file for later processing. Then, time stamps were added for the corresponding elements on the interpretation track of each file (see Figure 1).

Figure 1: Screenshot of Garage Band with time stamps

In some cases, the target language equivalent was a mistranslation or an unprecise translation of the source speech input. Based on Defrancq (2015), the time lags of these elements were still calculated and considered as valid. However, when the translation of the source speech keyword was omitted in the interpretation, the time lag could not be measured, and the relevant sentence was therefore considered null. These cases were marked as *NA* in the Excel files. In case of different word orders between two languages within a group of keywords, time lag was always calculated at the onset of the first word of the group. For example, "United Nations" translates to "Nations Unies", "Naciones Unidas" and "Nazione Unite" in French, Spanish and Italian and "World War II" is "Seconde Guerre Mondiale" or "Deuxième Guerre Mondiale", "Segunda Guerra Mundial" and "Seconda Guerra Mondiale" in French, Spanish and Italian. Time lag was therefore measured at the onset of "Nations", "Naciones" and "Nazione", respectively at "Seconde" or "Deuxième", "Segunda" and "Seconda". The length of the time lag for each sentence was calculated as the difference between the time stamp attached to the source speech keyword and the time stamp of the interpretation thereof. This time lag was calculated automatically with the help of an Excel formula. In the interest of precision, time lag was measured in seconds and milliseconds

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throughout this thesis. The number of translation errors were counted and categorized for each interpretation. Omissions, additions as well as mistranslations were considered as errors. Furthermore, for each participant I have classified whether they first interpreted the Ukraine(1) or the Switzerland(0) speech (see "Order" in Figure 2) and if they are a first or second year student (see "first year / second in Figure 2).

Figure 2: Screenshot of the Switzerland speech section of an Excel file during the data extraction

3.3.   Ethics

Before the collection of the data, the form "Formulaire pour les recherches réalisées dans le cadre d'un diplôme de Master" (see Appendix D) was filled in and sent to the "Commission éthique" (CUREG) at the University of Geneva. The code provided for this experiment was CUREG-MM-2022-05-74. All data gathered during this experiment were stored on the OneDrive server provided by the University of Geneva and were dealt with confidentially. All participants remain anonymous. They are referred to as *participant 1-15.* They all agreed to participate on a voluntary basis, and they signed a consent form agreeing to the recording of their interpretations (see Appendix E).

3.4.   Timeframes

The two speeches were composed between 29th March 2022 and 27th of April 2022. The experiments then took place during eight different sessions between 10th May 2022 and 18th May 2022. The proceedings involving the participants took 20 minutes per experiment session.

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4. Data and analysis of the data

In the following chapter I will explain how I prepared the data from the experiments and how this data was analyzed.

4.1.   Data Preparation

4.1.1. Time lag

A total of 600 interpretations of the source speech sentences were processed for the analysis of this experiment. Out of all the interpretations, 21 sentence interpretations (6 for the Ukraine speech and 15 for the Switzerland speech) had to be excluded because either the keywords had not been uttered by the participants or they had skipped the whole sentence. These cases have been marked as *NA* in the Excel files (see Figure 2).

The data of the experiments were cleaned and analyzed using the packages *data table, lubridate, dplyr, tidyr, lme4, optimx* and *ggplot2* in R Studio (RStudio 2022.02.2). The template I used, was provided by my thesis supervisor, Rhona Amos. First, the Excel files had to be converted to the csv format and then they were imported to R Studio. Then, the program calculated the mean time lag for each speech (Ukraine and Switzerland), as well as the standard deviation for each speech. Then, the number of *NAs,* i.e., the number of omissions, per speech were counted and then removed. In the next step, the outliers were identified. This means that all columns with a time lag above 2.5 standard deviation greater or lower than the mean were labelled as outliers. These outliers were then manually counted. Following that, the outliers were removed, I therefore only kept the rows, which did not contain an outlier. After the data was cleaned, the statistical model was run in order to find the mean time lag for both speeches as well as their standard deviation and the t-value.

4.1.2. Errors

Even though the present Masters' thesis does not focus on interpretation quality, the errors were still manually counted and classified according to Barik (1994): *Omissions*, *additions*, and *substitutions and errors*. *Omissions* are defined as follows:

> These, as stated, refer to items present in the original version which are left out of the translation by the T[ranslator]. Here we are dealing with clear omissions and not omissions resulting from the substitution of one thing for another by the T[ranslator] […]. (Barik, 1994, p.122)

According to Barik (1994, p.122), an *addition* is "material which is added outright to the text by the T[ranslator]." The category *substitutions and errors* "refers to material which is

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Fabienne Müller
Mémoire MA
Juin 2022

substituted by the T[ranslator] for something said by the S[peaker]." Barik states that some substitutions do not alter the content significantly; others, however, are greater errors of translation. Barik also proposes several subcategories for each category. Given the relatively small sample size of this experiment, I have decided to forgo these further categorizations. However, in the category *substitutions and errors,* I have decided only to count what, according to Barik (1994), is subcategorized into "gross semantic errors" (ex. the Italian word "Losanna" as a translation for the English word "Lucerne"). However, "mild semantic errors," i.e., slight inaccuracies of translation, were not counted as errors (ex. the French verb "s'étendre" for the English phrase "expand their territory"). As can be seen in Figure 2, two columns in each participant's Excel file for the data extraction were named "Keyword interpretation U" or "Keyword interpretation CH" and another column was named "Error speech 1" or "Error speech 2," respectively. In the columns "Keyword interpretation" I wrote down the exact translation each participant provided for each keyword, in case of an omission of the keyword the column was marked "X." If in a sentence an error occurred, the corresponding row was marked with a "1". In the columns "comments speech U" and "comments speech CH" the error was described. In a separate Excel file, the errors were then classified into the different categories. With the aim to see whether there is a difference between the participants according to how far along they are in the Masters' program, the errors were categorized according to whether they were committed by a first or second year student (see Figure 3).

Sentence	Omission U 1	Addition U 1	S & E U 1	Omission CH 1	Addition CH 1	S & E CH 1		Omission U 2	Addition U 2	S & E U 2	Omission CH 2	Addition CH 2	S & E CH 2
1						1							
2				1		1							3
3													
4													
5													1
6				1		1							1
7										1			
8													
9				1									
10													
11						1							
12				1		1						2	1
13						3						1	2
14						1					1		
15													
16	1					2							1
17	2		1	1				3					3
18				1									
19				1									
20				1									
total errors	3		1	8		11		3		1	4		12

Figure 3: Screenshot of the Excel file "Classification of errors"

The classification of errors has been made with the aim of revealing a pattern. If many errors are detected in the same sentences, this could indicate that the kind of time lag strategy employed by the participants was not effective at a certain point of the speech. Furthermore,

it could provide insight into the evolution of student interpreters during their interpreting training program.

4.1.3. Questionnaires

The questionnaires given to the participants at the end of the experiment sessions were prepared manually. For this purpose, I analyzed and counted the answers given to each of the questions.

4.2. Data Analysis

4.2.1. Time lag

The mean time lag for the Ukraine speech was 2.208997 seconds, while the standard deviation was at 0.9826562. The mean time lag for the Switzerland speech was 2.964074 seconds and the standard deviation at 1.277837. Twenty outliers were counted and therefore eliminated for the final calculation.
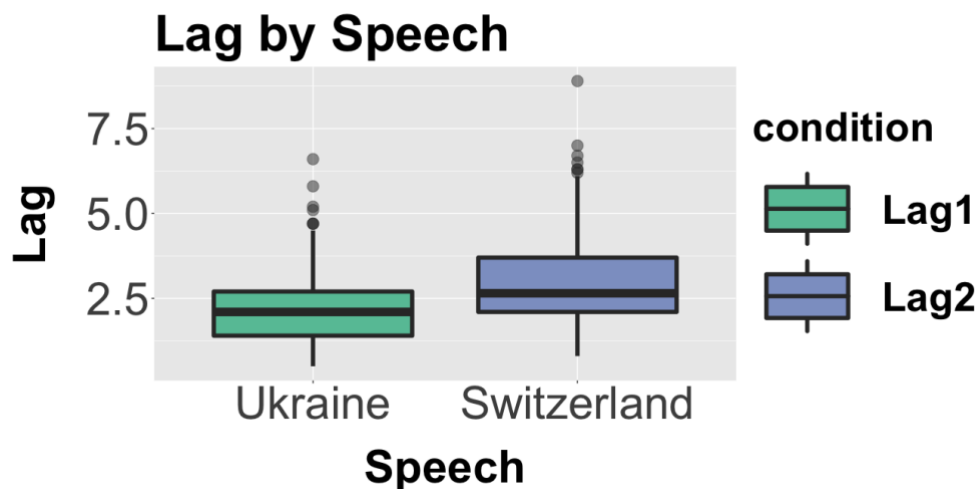
Figure 4: Time lag by speech

Figure 4 shows that time lag in the Ukraine speech was shorter than in the Switzerland speech. It also shows that the deviation in the Switzerland speech is greater than the one in the Ukraine speech. The spread of outliers is also greater in the speech about the Old Swiss Confederacy.

Moreover, the run of the RStudio code showed the following:

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	Estimate	Std. Error	t-value
Intercept	2.21	0.08	27.50
Condition Lag 2	0.76	0.12	6.47

Table 1: Results from RStudio

Table 1 shows that for Lag 2, i.e., the Switzerland speech, the lag is predicted to be 0.76 seconds longer than for Lag1, i.e., the Ukraine speech, which is estimated at 2.21 seconds. This means that time lag in the speech about the Old Swiss Confederacy is significantly longer than in the Ukraine speech. The t-value is 6.47, which shows that there is a significant difference between time lag in the two speeches.

4.2.2. Errors

As mentioned in chapter 4.1.2, the interpretation errors were manually counted and classified into three different categories (*omissions*, *additions* and *substitutions and errors*) and were divided into errors committed by first year students and second year students. This categorization showed the following results:

During the interpretation of the 600 sentences 43 errors occurred (23 of them were committed by first year and 20 by second year students). However, at this point it is important to mention that only the errors committed at the point of measurement, i.e., the moment of the utterance of the keywords or groups of keywords, were counted. It is therefore highly possible that more errors occurred throughout the interpretation of the source sentences which were not taken into consideration for this analysis. The majority of errors were committed during the interpretation of the speech about the Old Swiss Confederacy (19 by first year and 16 by second year students). No cases of *addition* were recorded in either of the two speeches or the two participant groups. First year students *omitted* information 3 times in the Ukraine speech and 8 times in the Switzerland speech. *Substitutions and errors* occurred once in the Ukraine speech and 11 times in the Switzerland speech (see Figure 5).

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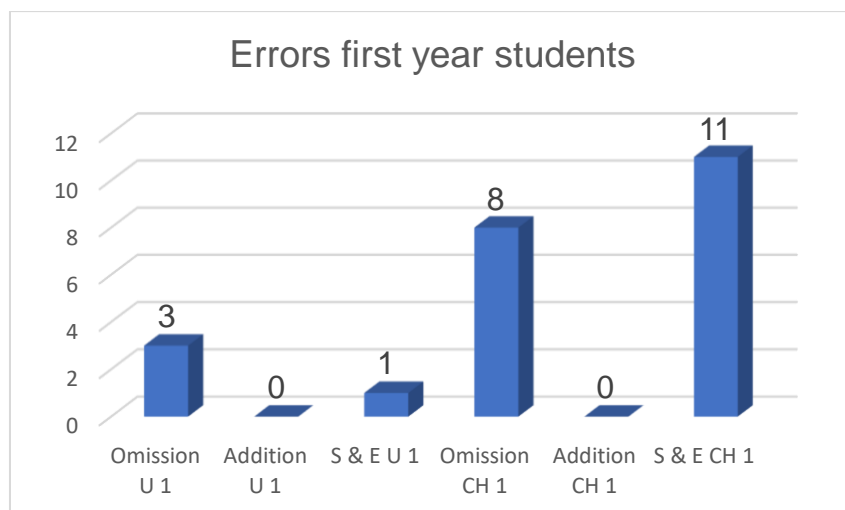
Figure 5: Errors first year students

Second year students committed 3 cases of *omission* in the Ukraine speech and 4 in the Switzerland speech. Cases of *substitutions and errors* happened once in the Ukraine speech and 12 times in the Switzerland speech (see Figure 6).
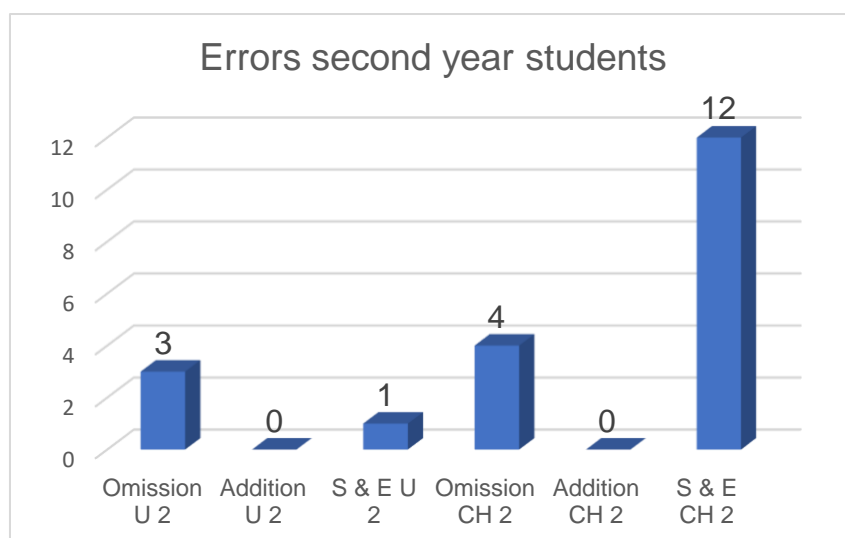
Figure 6: Errors second year students

While first year students (6) only represent 40% of all participants (15), they committed 53,5% of all the errors.

Figure 7 and Figure 8 show the types of errors committed by first and second year students during the speech about the Old Swiss Confederacy. While both are more likely to *substitute*

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instead of *omitting* keywords, this tendency is much more pronounced among second year students.
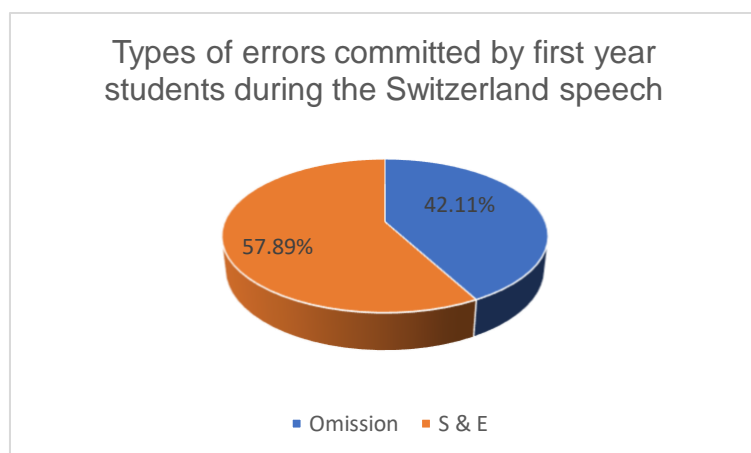
Figure 7: Types of errors committed by first year students during the Switzerland speech
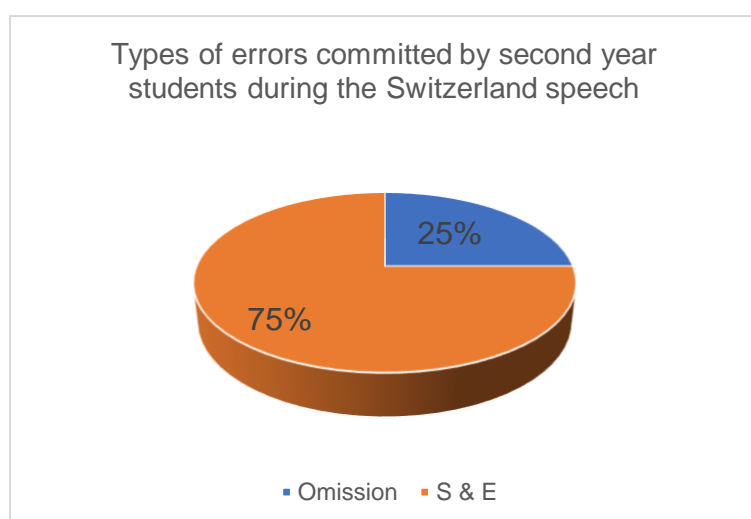
Figure 8: Types of errors committed by second year students during the Switzerland speech

When looking at this data it is important to bear in mind that the sample size of 43 errors is quite small and in order to confirm this data, a much larger sample size would need to be analyzed.

4.2.3. Questionnaires

The question "Did you think that one of the speeches was easier to interpret?" was answered with "yes" by 14 participants and with "no" by one participant. The follow-up question "If yes, which one?" was answered as follows: according to 13 participants the speech about Ukraine

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was easier to interpret and for one participant the one about the Old Swiss Confederacy was easier. The answers to the question "Why do you think it was easier for you?" were classified into different categories (see Figure 9):

- Easier because of familiarity with the topic matter and the dates

- Easier because the topic is more recent

- Easier because of the dates and figures

- Easier because it was the second speech of the experiment

- Easier because of other reasons
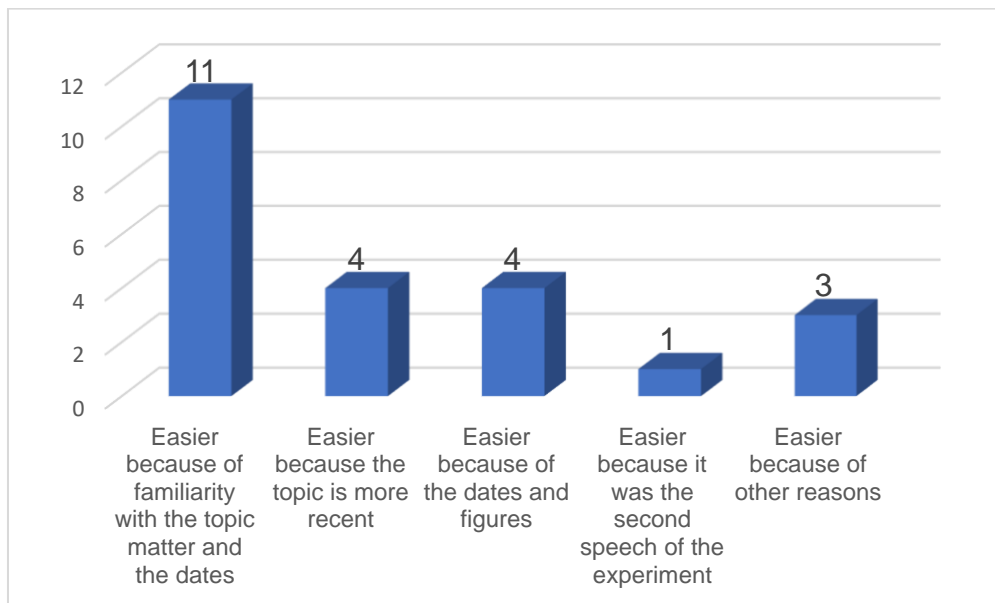
Figure 9: Answers to the question "Why do you think it was easier for you?"

Of the 13 participants who answered that they found the speech about Ukraine easier to interpret 11 motivated this answer with their greater familiarity with the topic. Four participants stated that it was easier because the topic was more recent and therefore more present in their minds. Four participants also mentioned dates and figures. Two were of the impression that there were fewer dates and figures in the speech about Switzerland and two stated that the dates and numbers in the speech about Ukraine demanded less concentration. One participant found the second speech they interpreted during the experiment session easier, in their case the second speech was the one about Ukraine. Other reasons that were given: more confidence during the Ukraine speech, better ability to predict upcoming utterances in the speech about Ukraine and the smaller density of the Ukraine speech.

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The participant, who judged the speech about the Old Swiss Confederacy as more easily interpretable, justified their answer as follows: "The speaker spoke more slowly & used syntax that was easier to predict."

One participant also provided some oral feedback at the end of their experiment session (see Appendix F). They stated that they were of the impression that they felt comfortable leaving a larger time lag as they were aware of the fact that a pause of five seconds would come after each sentence, during which they could finish their interpretation.

5. Discussion of the results

In the following chapter I will expand on the data of chapter 4 and discuss them with reference to the literature discussed in chapter 2.

5.1.　　Answers to the research question and hypotheses

This study aimed at answering the research question and hypotheses below.

Research question: Is the time lag shorter if interpreters are familiar with the context of the speech they are interpreting?

Hypotheses:
1. When presented with a speech, of which the interpreters are familiar with the context, they will be able to keep a shorter time lag than when they are presented with a speech, of which they are not familiar with the context.
2. In the interpretation of the speech, of which the interpreters are familiar with the context, at times the interpreters will be able to utter chunks of information before the speaker does (true prediction).
3. In the interpretation of the speech, of which the interpreters are not familiar with the context, no cases of true prediction will occur.

The data extracted from the experiment provided answers to the questions above.

The research question was answered. When presented with a speech, of which the interpreters are more familiar with the context, the time lag of their interpretation is shorter than when they are confronted with a speech with an unfamiliar context.

Furthermore, answers were found for all three hypotheses.
1. The results showed that time lag in the Ukraine speech, for which I assumed the participants would have more contextual knowledge, the interpreters kept a shorter time lag than in the speech about the Old Swiss Confederacy.

2. However, I was not able to confirm hypothesis 2. Even though the participants kept a shorter time lag for the Ukraine speech, no case of true prediction has been recorded.

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This result was somewhat surprising as it did not confirm my hypothesis. Nevertheless, there are possible explanations. It is possible that several participants either consciously or subconsciously felt more comfortable leaving a longer time lag because they knew that they would have some time, i.e., the five seconds between each source speech sentence, to catch up with the speaker. This was also stated by one of the participants after the experiment (see Appendix F). However, that no case of true prediction has been recorded does not mean that prediction has not occurred during language comprehension. As stated in chapter 2.2.1, prediction is defined as the pre-activation of any aspect of an utterance. This pre-activation happens before the comprehender hears that utterance (Amos & Pickering, 2020). And according to Chmiel (2021, p.19) prediction therefore "involves the activation of a linguistic item before its perceptual input." In the context of this experiment, it was not possible to prove or disprove whether the participants have correctly predicted and activated certain elements before they heard the utterance. However, as stated in chapter 4.2.3, two participants stated that they perceived the speech about Ukraine as easier because they could more easily predict upcoming utterances.

3. For the Switzerland speech, no cases of true prediction occurred. Therefore, I found support for this hypothesis.

5.2.   Further findings

5.2.1. Perceived ease

Even though the speeches were designed to syntactically and lexically be as similar as possible, they were aligned in terms of the number of words per sentence and they were read out by the same speaker at the same pace, almost all the participants stated that the speech about Ukraine was easier to interpret (13 out of the 15 participants). Some participants were even of the impression that there were more difficult elements, such as dates and figures, in the speech about the Old Swiss Confederacy. Difficult elements are according to Dawrant and Han (2022) among other things unfamiliar proper nouns and numbers. This shows that even though the two speeches were objectively of comparable difficulty, the one with the familiar content was still perceived as more feasible than the other one.

5.2.2. Performance difference between first and second year students

During the analysis of the data, a considerable difference concerning the performance of first and second year students could be detected. This triggered my interest and led me to

investigate this difference. As shown in chapter 4.2.2, first year students committed significantly more errors than second year students (53,5% of all errors while making up 40% of all the participants). Given the relative short time (4 months) during which these participants have been practicing simultaneous interpreting this result is not all too surprising. However, there is a difference between the types of errors committed by first year students and by second year students during the interpretation of the Switzerland speech (see Figure 7 and Figure 8). While both groups were more likely to substitute instead of omitting keywords, this tendency was much more pronounced among second year students. While first year students omitted in 42.11% of the cases, second year students only omitted in 25% of the recorded mistakes. These results were consistent with Barik's (1994) study described in chapter 2.6.2. I construe them as follows: During the 12 months of additional interpreting training, which the second year students had, they have already had to face unfamiliar situations and speeches. They have acquired other strategies in order to avoid *omissions*, since *omissions* are according to Riccardi (2005; 2022) emergency strategies and therefore never a desirable solution. Instead of omitting material, second year students chose the solution of substitution (75% of all errors during the Switzerland speech).

6. Conclusion

Contextual knowledge is of great importance for simultaneous interpreting. The relevant literature as well as my own findings have shown this.

6.1.   Summary of the findings

This study has shown that contextual knowledge holds several benefits for simultaneous interpreters.

1. It aids in keeping a shorter time lag.
2. Even though no cases of true prediction were recorded, some participants of the study stated that they could predict upcoming utterances because of their background knowledge on the topic.
3. Contextual knowledge also helps in reducing interpreting errors.

This study has also shown that the kinds of errors committed evolve over time. First year students committed more errors and more serious errors since they often chose (or were forced to choose) the emergency strategy *omission.*

6.2.   Limitations of the research and future recommendations

Given the relatively small sample size of 15 participants for this Masters' thesis, in a future research project, this study could be reproduced on a larger scale. There are several possibilities to build on this study. A further research possibility would be the following: instead of testing only student interpreters, a comparison could be made between experienced interpreters and novice or student interpreters. In my opinion, it could also be interesting to compare time lag of groups presented with the same speech, with and without the pause of five seconds. To expand the prediction part of the study, a comparison could be made between structurally symmetric and asymmetric languages. Another possibility to measure prediction is to conduct an eye tracking study, for which the scale of the present thesis was too small.

The experiment part "questionnaire" could also be expanded. If I could do this part again, I would ask the participants further questions, such as how well they thought they were informed about each of the topics. Another interesting element, which I could have analyzed, is the relationship between time lag and interpreting errors for the individual participants.

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Mémoire MA
Juin 2022

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8. Appendices

A Checklist for the experiments

- Reserve rooms
- Arrive at least 15 minutes early to make sure the cabins work
- Welcome the participants
- Short briefing about the procedure of the experiment. (Two English speeches of approximately 3.5 minutes each. Pauses between sentences are part of the experiment and not a glitch in the video. Interpret as you would in class. You will interpret the first speech and after a two-minute break you will interpret the second speech. After the second interpretation, you will be asked to fill in a questionnaire about the interpretations.)
- The participants sign the consent form
- Sound check with the participants
- Start activity on interpreter
- Listen to each participant to make sure everything works
- Stop activity
- Export and save each recording to OneDrive
- Start second activity
- Listen to each participant to make sure everything works
- Stop activity
- Hand out the questionnaire
- Export and save each recording
- Take back the questionnaire
- Debriefing and answering questions about the experiment
- Thank the participants

B Speeches with quantification of the stimuli

1.	Ukraine, or at least part of Ukraine, has been in a state of **war** for a long time. **18 words** **14th position** → **same keyword (sg/pl)**	The Old Swiss Confederacy, now known as Switzerland, has seen a series of **wars** in the past. **17 words** **14th position**
2.	The conflict started in **2014** after the Ukrainian Revolution of Dignity. **11 words** **5th pos** → **keywords: years**	These wars began in **1292** after the legendary oath between three cantons. **12 words** **5th pos**
3.	Shortly after that, Russia annexed **Crimea**. **6 words** **6th (last) pos** → **keywords: proper name / adjectif**	Back then, some cantons were **autonomous**. **6 words** **6th (last) position**
4.	Then, separatists seized part of the Donbas **region**, which sparked a war there. **13 words** **8th pos** → **keywords: nouns**	They were ambitious and wanted to expand their **territory**, which led to a war. **14 words** **9th pos**
5.	In 2021, Russia began a large military build-up along its border with **Ukraine**. **13 words** **13th (last) pos** → **keywords country**	In 1381, the kings and dukes of Austria tried to conquer the **Confederacy**. **13 words** **13th (last) pos**
6.	NATO countries such as the USA, France and **Germany** expressed their concern about the ongoing situation. **16 words** **9th pos** → **keywords: country / city in a list**	The cities of the Pact of Constance including Zürich, Zug and **Lucerne** defied the Austrian dynasty. **16 words** **12th pos**
7.	Finally, on the 24th of February 2022, Russia invaded **Ukraine**. **10 words** **10th (last) pos** → **keywords: countries**	Finally, on the 12th of January 1386, Lucerne invaded **Austria**. **10 words** **10th (last) pos**
8.	This move marked the beginning of the **war**. **8 words** **8th (last) pos** → **same keywords**	This move led to the start of the **war**. **9 words** **9th (last) pos**
9.	This has led to the largest refugee crisis since **World War II**. **12 words (10 elements)** **12th (last) pos** → **keywords: proper name / noun**	The next centuries were therefore marked by violent **conflicts**. **9 words** **9th (last) pos**
10	More than 4.2 million **Ukrainians** have fled the country. **9 words**	Approximately 10'000 **lives** were lost during this period. **8 words**

	5th pos → **keywords: Demonym / noun after number**	**3rd pos**
11	On the 4th of March 2022, a temporary **ceasefire** for the Mariupol region was announced. **15 words** **9th pos** → **keywords: nouns (synonyms)**	On the 21st of February 1386, an **armistice** between Austria and the cantons was called. **15 words** **8th pos**
12	However, it has been reported that Russian forces have not respected this **ceasefire**. **13 words** **7th pos** → **keywords: nouns (same as 11)**	However, neither side had any real interest in ending the conflict and the **armistice** ended. **15 words** **7th pos**
13	In a televised speech, the Russian president, **Vladimir Putin**, explained the reasons for the invasion. **15 words** **8th pos** → **keywords: proper name (person)**	A decisive battle took place between Duke **Leopold the 3rd** and the Old Swiss Confederacy. **15 words** **8th pos**
14	Putin stated that Ukraine was ruled by **Neo-Nazis**. **8 words** **8th (last) pos** → **keywords: proper name / noun**	It was caused by ongoing territorial **disputes**. **7 words** **7th (last) pos**
15	Therefore, he announced the beginning of a special military **operation**. **10 words** **10th (last) pos** → **keywords: nouns**	During the battle, one soldier was responsible for the Swiss **victory**. **11 words** **11th (last) pos**
16	Civilian infrastructure was attacked by the **Russian** army in a very brutal manner. **13 words** **7th pos** → **keywords: Demonym / demonymic adjective**	He opened a breach in the **Austrian** lines by throwing himself into their pikes. **14 words** **7th pos**
17	In doing so, they destroyed a maternity hospital, killing three women, and **injuring** at least 16 people. **17 words** **13th pos** → **keywords: verbs**	This meant, he took them down with his body, allowing the confederates to **attack** through the opening. **17 words** **14th pos**
18	The Russian invasion of Ukraine has been widely **condemned** by the international community. **13 words** **9th pos** → **keywords: verb / noun**	The Austrians counted many casualties, including their **leader**, Duke Leopold the 3rd. **12 words** **8th pos**
19	On the 2nd of March, the General Assembly of the **United Nations** adopted a resolution.	The Austrians surrendered and on the 12th of October, an **armistice** was agreed upon.

	15 words **11th pos** → **keywords: proper name / noun**	**14 words** **11th pos**
20	The resolution condemned the **invasion** and demanded a full withdrawal of Russian troops. **13 words** **5th pos** → **keywords: nouns**	This armistice was followed by a peace **agreement** that was valid for one year. **14 words** **7th pos**

C Questionnaire

Participant code _____

Date & Time _____

Which booth did you sit in? _____

What is your language combination?

A: _____

B: _____

C: _____

Did you think that one of the speeches was easier to interpret?

- Yes

- No

If yes, which one?

- Ukraine

- Old Swiss Confederacy

Why do you think it was easier for you? _____

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D Ethical Compliance

UNIVERSITÉ DE GENÈVE

CUREG 2.0

COMMISSION UNIVERSITAIRE POUR UNE
RECHERCHE ETHIQUE A GENEVE (CUREG)

DECISION FORM: CUREG-MM-2022-05-74

CUREG DECISION: Certification of Ethical Compliance

☒ PROCEDURE APPLIED TO MASTER'S PROJECT

☐ FAST TRACK PROCEDURE APPLIED TO RESEARCH PROJECT

☐ IN-DEPTH PROCEDURE APPLIED TO RESEARCH PROJECT

1.	Title of the research project	Predictability in Simultaneous Interpreting
2.	Responsible researcher(s)	Rhona Amos
3.	Funding	
4.	Faculty / Interfaculty center	FTI

Date of submission to the Commission	03.05.2022
Decision of ethical compliance	yes ☒ no ☐
Date of acceptance (sent by e-mail)	09.05.2022
Expected completion date of the project	30.06.2022
Signature of CUREG President:	Brigitte Galliot Date: 02.06.2022

This authorization is valid only until the date of completion of the project.

Any changes to the project (title, number of participants, duration of the research, etc.) must be reported to the CUREG before the completion date.
Please contact us at "commission-ethique@unige.ch".

Commission Universitaire pour une Recherche Ethique à l'Université de Genève
Rue du Général-Dufour 24
1211 Genève 4

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E Consent form

RECHERCHE Predictability in Simultaneous Interpreting	
Responsable(s) du projet de recherche :	Fabienne Müller, étudiante en interprétation de conférence Email : fabienne.mueller@etu.unige.ch
	Rhona Amos, Maître-assistante FTI Tel : 022 37 98927
	Email : rhona.amos@unige.ch

(Dans ce texte, le masculin est utilisé au sens générique ; il comprend aussi bien les femmes que les hommes.)

INFORMATION AUX PARTICIPANTS ET CONSENTEMENT DE PARTICIPATION

Information aux participants

Dans le cadre de ce mémoire, je vais examiner si le type de discours influence l'interprétation. Au cours d'une session expérimentale, vous êtes priés d'interpréter deux discours d'environ 3 minutes chacun et votre interprétation sera enregistrée. Après l'expérience, je vous invite à remplir un questionnaire sur vos impressions concernant les discours et votre interprétation de ceux-ci. L'ensemble de la session expérimentale durera entre 10 et 15 minutes. Si vous ne consentez pas à l'enregistrement audio de votre interprétation, vous serez exclu de cette étude. L'étude se déroulera dans l'une des trois petites salles d'interprétation d'Uni Mail, 40 Blvd du Pont d'Arve, Genève - soit 6034, 6052 ou 6062.

Si vous le souhaitez, je peux vous fournir une explication plus détaillée de ma recherche lors du débriefing après l'expérience. Je vous remercie beaucoup de votre participation.

Protection des données

Les enregistrements audios d'interprétation fais dans le cadre de cette recherche seront enregistrés uniquement avec le numéro de participant que l'on vous a attribué. Ces données seront stockées sur l'espace de stockage (One Drive UNIGE) de Madame Fabienne Müller et l'espace de stockage NAS de Madame Rhona Amos. L'accès est protégé par des mots de passe. La liste contenant la correspondance entre votre code de participant et votre identité sera cryptée et stockée sur une clé USB dont l'accès est également protégé par un mot de passe. Cette clé sera entreposée dans un tiroir fermé à clé du bureau de Madame Rhona Amos. Cette liste sera accessible uniquement aux personnes listées sous la rubrique « Responsable(s) du projet de recherche » et elle sera détruite dès le 15/07/2022 (anonymisation des données). Les enregistrements audios réalisés lors de nos rencontres seront détruits une fois analysés. De cette manière, nous ne posséderons plus de données personnelles vous concernant et nous ne serons plus en mesure d'apparier vos réponses à votre identité. Par conséquent, après cette date nous ne

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serons plus en mesure de détruire vos données si vous en faites la demande. Les données anonymisées seront conservées sans limite de temps. Ces données pourront être déposées sur des plateformes « open science » (outil de travail de recherche collaboratif) afin de les partager avec d'autres chercheurs. Les données anonymisées pourront faire l'objet d'une réutilisation dans des recherches futures. Le présent formulaire de consentement sera archivé dans une armoire fermée à clé de la FTI pendant 5 ans sous la responsabilité de Madame Rhona Amos.

Accès aux résultats de la recherche pour les participants

En cas d'intérêt de votre part quant aux résultats de la recherche vous pouvez contacter Madame Amos à l'adresse e-mail rhona.amos@unige.ch dès le 15/07/2022. Au vu de l'anonymisation des données aucun résultat individuel ne pourra être transmis.

Consentement de participation à la recherche

Sur la base des informations qui précèdent, je confirme mon accord pour participer à la recherche « Predictability in Simultaneous Interpreting », et j'autorise :

- l'utilisation des données à des fins scientifiques et la publication des résultats de la recherche dans des revues ou livres scientifiques, étant entendu que les données resteront anonymes et qu'aucune information ne sera donnée sur mon identité ;   ☐ OUI   ☐ NON

- l'utilisation des données à des fins pédagogiques (cours et séminaires de formation d'étudiants ou de professionnels soumis au secret professionnel).   ☐ OUI   ☐ NON

- L'enregistrement audio de mon interprétation.   ☐ OUI   ☐ NON

J'ai choisi volontairement de participer à cette recherche. J'ai été informé-e du fait que je peux me retirer en tout temps sans fournir de justifications et que je peux, le cas échéant, demander la destruction des données me concernant.

Ce consentement ne décharge pas les organisateurs de la recherche de leurs responsabilités. Je conserve tous mes droits garantis par la loi.

Prénom Nom

Signature

Date

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ENGAGEMENT DU CHERCHEUR

L'information qui figure sur ce formulaire de consentement et les réponses que j'ai données au participant décrivent avec exactitude le projet.

Je m'engage à procéder à cette étude conformément aux normes éthiques concernant les projets de recherche impliquant des participants humains, en application du *Code d'éthique concernant la recherche au sein de la Faculté de psychologie et des sciences de l'éducation* et des *Directives relatives à l'intégrité dans le domaine de la recherche scientifique et à la procédure à suivre en cas de manquement à l'intégrité* de l'Université de Genève.

Je m'engage à ce que le participant à la recherche reçoive un exemplaire de ce formulaire de consentement.

Prénom Nom
....

Signature
....

Date
....

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F Oral feedback by participants

Oral feedback participants

date

Participant — coment

10/05 : 1. 5 sec pause little confusing

11/05

2 les deux discours étaient difficiles
↳ connaissait l'histoire Schlacht v. Sempach

4. CH easier

12/05

6: 5 sec pause almost allowed a consec interp.
↳ larger time lag cos
O L pause will come

16/05

17. very interesting
P is interested in results at the end

18/05 M femes figures in #2

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