Hacettepe University Graduate School of Social Sciences

Department of Translation and Interpretation

COMPLEMENTARITY
BETWEEN LINGUISTIC AND EXTRALINGUISTIC KNOWLEDGE
IN SIMULTANEOUS INTERPRETING

Özge BAYRAKTAR ÖZER

Master's Thesis

Ankara, 2017

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KABUL VE ONAY

Özge BAYRAKTAR ÖZER tarafından hazırlanan ""Complementarity between Linguistic and Extralinguistic Knowledge in Simultaneous Interpreting" başlıklı bu çalışma, 15.06.2017 tarihinde yapılan savunma sınavı sonucunda başarılı bulunarak jürimiz tarafından Yüksek Lisans Tezi olarak kabul edilmiştir.

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o **Tezimin/Raporumun .....tarihine kadar erişime açılmasını ve fotokopi alınmasını (İç Kapak, Özet, İçindekiler ve Kaynakça hariç) istemiyorum.**
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x **Tezimin/Raporumun 15.06.2019 tarihine kadar erişime açılmasını istemiyorum ancak kaynak gösterilmek şartıyla bir kısmı veya tamamının fotokopisinin alınmasını onaylıyorum.**

o **Serbest Seçenek/Yazarın Seçimi**

15 /06/2017

Özge BAYRAKTAR ÖZER

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ABSTRACT

BAYRAKTAR ÖZER, Özge. *Complementarity between Linguistic and Extralinguistic Knowledge in Simultaneous Interpreting*, Master's Thesis, Ankara, 2017.

Quality in simultaneous interpreting depends on a variety of factors that can be related to the interpreter, speaker, audience, interpreting environment and so on. Awareness of cognitive processes of simultaneous interpreting, training on certain strategies to be applied, practice and experience on simultaneous interpreting can help overcome adverse effects of interpreter-related factors on the interpreting quality. One of the interpreter-related factors is the lack of knowledge, which can be categorized as linguistic and extralinguistic knowledge in the broadest sense, required to comprehend and render the message. Verbal discourse is based on these two main types of knowledge that are the prerequisites of simultaneous interpreting. Although there is a categorization of two different knowledge types, linguistic and extralinguistic knowledge are inter-dependable factors and the lack of one type can be compensated by the other. This natural complementarity can help interpreters overcome their lack of word knowledge and/or subject knowledge during simultaneous interpreting.

This study aims to investigate the complementarity between linguistic and extralinguistic knowledge in simultaneous interpreting. To this end, a single group pretest/posttest research design was employed with a sample of conference interpreting students at Hacettepe University in order to investigate to what extent the complementarity can be achieved in political, technical and medical text samples. The obtained data were scored considering the quality assessment criteria set to evaluate interpreting performance. In addition, comments of the participants were also taken into consideration during the evaluation of their self-consciousness and attitudes towards their own performances during simultaneous interpreting. In addition, a post-test was administered to investigate the effect of the training offered to the participants regarding the complementarity.

The results of the study indicate that the participants successfully complemented their lack of linguistic knowledge through their extralinguistic knowledge, yet not vice versa. At the end of the training, the performances of the participants showed that they could equally complement their lack of knowledge. In addition, the difference between pre-test and post-test performances of the participants was found statistically significant in all text groups and subject areas.

Key Words: complementarity, linguistic knowledge, extralinguistic knowledge, cognitive load, conference interpreting, simultaneous interpreting, effort model.

ÖZET

BAYRAKTAR ÖZER, Özge. *Andaş Çeviride Dilsel ve Dil Dışı Bilginin Bütünleyiciliği*, Yüksek Lisans Tezi, Ankara, 2017.

Andaş çeviride kalite, çevirmen, konuşmacı, dinleyiciler, çeviri ortamı gibi çeşitli faktörlere bağlıdır. Andaş çevirinin bilişsel süreçlerine ilişkin farkındalık, uygulanabilecek belirli stratejilere yönelik eğitim, andaş çeviride kazanılan pratik ve deneyim, çeviri sürecini olumsuz etkileyebilecek çevirmenle ilgili etmenlerin ortadan kaldırılmasına yardımcı olabilir. Çevirmenin kendisiyle ilgili olan etmenlerden biri de, iletinin anlaşılması ve yorumlanması için gerekli olan ve en geniş kapsamıyla dilsel ve dil dışı bilgi olarak sınıflandırılan bilgi eksikliğidir. Sözlü anlatım, andaş çevirinin de ön koşulları olarak görülen bu iki temel bilgi türüne dayanmaktadır. İki farklı bilgi türü sınıflandırılmasına karşın, dilsel ve dil dışı bilgi birbirine bağlı etmenler olup, bir bilgi türünün eksikliği, diğer bilgi türü ile telafi edilebilir. Bu doğal bütünleyicilik, çevirmenlerin andaş çeviri sırasında sözcük bilgisi ve/ya konu bilgisi eksikliklerinin üstesinden gelmesine yardımcı olabilir.

Bu çalışma, andaş çeviride dilsel ve dil dışı bilgi arasındaki bütünleyiciliğin andaş çeviriye etkisini incelemeyi amaçlamaktadır. Bu doğrultuda, Hacettepe Üniversitesi'nden konferans çevirmenliği öğrencilerinin oluşturduğu bir örneklem grubu ile tek gruplu öntest/sontest tasarımı uygulanarak, iki bilgi türü arasındaki bütünleyiciliğin siyasi, tıbbi ve teknik metin örneklemlerinde ne ölçüde uygulandığı incelenmiştir. Elde edilen veriler, kalite değerlendirme ölçütlerine göre puanlanmıştır. Bunun yanı sıra, katılımcıların andaş çeviri sırasındaki tutumlarının ve öz bilinçlerinin incelenmesinde, katılımcıların yorumları da dikkate alınmıştır. Ayrıca, katılımcılara dilsel ve dil dışı bilgi arasındaki bütünleyicilik üzerine verilen eğitimin, performanslarına olan etkisi son-test ile ölçülmüştür.

Çalışmanın bulgularına göre, katılımcılar dilsel bilgi eksikliklerini dil dışı bilgileriyle tamamlayabilmiştir ancak dil dışı bilgi eksikliklerini dilsel bilgi ile tamamlayamamıştır. Verilen eğitim sonunda ise, katılımcılar her iki bilgi türünü de eşit biçimde tamamlayabilmiştir. Bu bağlamda, katılımcıların ön-test ve son-test performansları arasındaki fark, tüm metin gruplarında ve konu alanlarında istatistiki açıdan anlamlı bulunmuştur.

Anahtar Kelimeler: bütünleyicilik, dilsel bilgi, dil dışı bilgi, bilişsel yük, konferans çevirmenliği, andaş çeviri, çaba modeli.

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LIST OF ABBREVIATIONS

EVS **:** Ear-Voice Span

L1 : First Language, Native Language

L2 : Second Language, Foreign Language

ELK **:** Extralinguistic Knowledge

LK **:** Linguistic Knowledge

SI **:** Simultaneous Interpreting

SL **:** Source Language

TL **:** Target Language

ST **:** Source Text

TT **:** Target Text

T(tW) **:** First Group Technical Test (Involving *Words* Unknown to the Participants)

T(tS) **:** Second Group Technical Text (Involving *Subject* Unknown to the Participants

T(mW) **:** First Group Medical Text (Involving *Words* Unknown to the Participants)

T(mS) **:** Second Group Medical Text (Involving *Subject* Unknown to the Participants)

T(pW) **:** First Group Political Text (Involving *Words* Unknown to the Participants)

T(pS) **:** Second Group Political Text (Involving *Subject* Unknown to the Participants)

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CHAPTER 1

INTRODUCTION

Interpreting is a means of communication between two different parties having different languages, cultures, and perspectives. It is as challenging and demanding as communication itself since it encompasses people adopting at least two different views of world, perspectives, and approaches to events. Therefore, there are many pitfalls to be encountered while ensuring communication between two languages and many factors contribute to interpreting performance. Cultural differences between communities, syntactical differences between languages, the realities of the environment, expectations of the parties as well as the interpreter's cultural background, ideology, cognitive load and even personality are just a few of factors affecting the interpreting process. In addition to all above mentioned and other yet unmentioned factors, time-constraint is the leading factor to complicate interpreting activity. Time constraint is the natural result of *simultaneity* feature of simultaneous interpreting which is widely preferred in international conferences, meetings, congresses to save time. This unnatural way of communication encourages and requires interpreters to be well-equipped in various fields of language use. Good command of the source and the target language is the most prominent prerequisite for an interpreter. However, a good knowledge of at least two languages is not sufficient alone. The knowledge of cultures, content, interpreting environment, as well as a satisfactory elocution and pleasant tone of voice, are also needed for a successful interpreting product.

There has been a variety of studies on this profession in cognitive, psychological, linguistic, and cultural aspects despite a very short historical and academic history of SI. Among them, one of the common discussions is held on the importance of linguistic and extralinguistic knowledge in interpreting. Since the particular studies on this very issue are limited, more experimental studies are needed to put forth empirical results. This study aims to contribute to the discussions on the effect of linguistic and extralinguistic knowledge in the literature with a specific focus on complementarity between them.

In this experimental study, complementarity between linguistic and extralinguistic knowledge are studied within the scope of simultaneous interpreting. The effect of linguistic and extralinguistic knowledge on SI of certain subject areas are also researched. To this end, the first chapter of this thesis draws a general framework of the topic through problem situation. In this chapter, aim and importance of studying this particular topic, as well as research questions of the study are introduced. Limitations and assumptions of the study are also explained and the definitions used throughout the thesis are listed. Finally, findings of the relevant research previously conducted on the topic are summarized.

The second chapter is allocated to the theoretical background that can lay the basis for this study. The scope and development of SI are presented on the basis of the theoretical framework; the main differences between interpreting and translation, types of interpreting are explained and historical development of SI as both a profession and academic field is elaborated. Afterward, four models and approaches in interpreting studies emphasizing the importance of extralinguistic knowledge and its complementarity with linguistic knowledge are summarized in general terms. Definitions and explanations of linguistic and extralinguistic knowledge are analyzed in a separate section of this chapter. Finally, quality and performance assessment discussion and the particular method used in this study are presented in the last section of this chapter.

The third chapter presents the methodology of the study. Participants and experimental design of the study are introduced. Each step of the test procedure is specified. Tests applied to the participants, interpreting texts and speeches are introduced in a detailed way under the section of *Data Collection Tools.* Statistical methods used for statistical analysis of the obtained data are also explained.

In the fourth chapter, pre-test, follow-up test and post-test results along with the data obtained from vocabulary test, extralinguistic knowledge test and comments of the participants are presented and interpreted. The numerical values of the results are visualized through tables and charts.

The last chapter focuses on conclusions that can be drawn from this study. The aim of the study and research questions are revisited in line with the obtained results. Suggestions are brought for training to improve the effectiveness in teaching SI.

Some recommendations are also made for further research to be conducted on the same or similar topic(s).

1.1. PROBLEM SITUATION

Time constraint is one of the biggest challenges in SI. This limitation does not let interpreter use the resources that can be used in consecutive interpreting such as note-taking or in translation such as dictionaries, glossaries and so on. Simultaneous interpreters need to rely mostly on their pre-existing knowledge, also known as *cognitive baggage*, which can be developed through long years of training, experience, and practice. The knowledge needed by an interpreter during verbal discourse can be divided into two main titles, namely linguistic and extralinguistic knowledge.

A good command of linguistic knowledge is the most commonly reported prerequisite for the comprehension of a given message in any language. When the case is SI, some students are observed to have the false perception that they need to know every single word in a speech/text or else they cannot be possibly successful in interpreting task. In parallel, some instructors prioritize teaching of broad vocabulary for SI candidates.

On the other hand, many publications in the field of interpreting studies report the importance of extralinguistic knowledge. Although there are various definitions and synonyms for the concept of extralinguistic knowledge, there is a consensus on its importance in a quality SI performance. However, scholars put forth opposite ideas about which type of knowledge to be prioritized during conference preparation and training. One view is in favour of terminological preparation before a conference since extralinguistic knowledge can be acquired as ad hoc knowledge in the conference environment (Gile, 2001, p.146)

The complementarity between linguistic and extralinguistic knowledge can also be focused on along with the importance of each knowledge type independently. As no type of knowledge can be acquired in isolation, the lack of linguistic knowledge

in a certain type of speech can be compensated by a good knowledge of extralinguistic knowledge or vice versa. Therefore, the higher the complementarity between two types of knowledge, the better comprehension and reproduction quality can be achieved during SI.

Consequently, linguistic and extralinguistic knowledge are among the fundamental prerequisites for SI and both of these factors directly affect interpreting quality.

1.2. AIM OF THE STUDY

This study aims to find the effect of linguistic and extralinguistic knowledge on SI with a specific focus on complementarity between two types of knowledge in political, medical and technical subject areas. The study also focuses on strategies that student interpreters used to overcome their lack of linguistic and/or extralinguistic knowledge. The differences in strategy use and performances are also examined in the scope of both technical and non-technical speeches.

1.3. RESEARCH QUESTIONS

There are three main research questions in addition to four sub-questions in this study.

(1) Is there a significant difference between the effect of linguistic knowledge and extralinguistic knowledge on simultaneous interpreting performance?

(2) To what extent can the complementarity between linguistic and extralinguistic knowledge be achieved in medical, political and technical speeches?

(3) Is there a significant difference between pre-test and post-test scores of the research group that received training on the complementarity between linguistic and extralinguistic knowledge?

1.3.1. Sub-questions

(1) How do the strategy uses of the participants to overcome the lack of linguistic and/or extralinguistic knowledge differ?

(2) Which interpreting stage is the most impaired by the lack of linguistic and extralinguistic knowledge?

(3) How do the attitudes of the participants towards speeches in which they lack linguistic and extralinguistic knowledge differ?

(4) In what ways do the results of the pre- and post-test self-evaluations differ regarding the attitudes of the participants?

1.4. IMPORTANCE OF THE STUDY

The importance of linguistic and extralinguistic knowledge is frequently reported in a variety of research on translation and interpreting. This importance attracts more attention to SI due to the time constraint that prevents interpreters from making use of resources such as dictionaries, glossaries, internet resources during the delivery to overcome their lack of linguistic and/or extralinguistic knowledge. However, there are limited empirical results that support the hypothesis that linguistic and/or extralinguistic knowledge improves quality in SI. Various different definitions and names given to these concepts and blurred lines between linguistic and extralinguistic knowledge make it harder to carry out research on this very topic. Besides, limited number of studies conducted on this issue are more related to the effect of extralinguistic knowledge than the complementarity between LK and ELK. Further empirical results can contribute to the investigation of the effect of both types of knowledge and complementarity between them in SI. This study is believed to bring a contribution to the literature in this sense and to shed light to SI instructors to address linguistic and/or extralinguistic knowledge during training of student interpreters.

1.5. ASSUMPTIONS

(1) All participants are assumed to be affected by the laboratory conditions in the same way.

(2) All participants are assumed to fulfill the interpreting tasks in full concentration.

(3) All participants are assumed to be on the same level of interpreting skills.

(4) The expert opinion is assumed to be satisfactory for detecting the validity of the speeches in the experiment.

(5) The delivery rate of the speeches is assumed to be the ordinary reading rate.

1.6. LIMITATIONS

(1) This thesis is devoted only to the complementarity between linguistic and extralinguistic knowledge in SI and the effect of the particular training on SI performance of the participants.

(2) Directionality is only from B language into A language, in other words, from English into Turkish.

(3) The research sample is limited to the students from the English Division of the Department of Translation and Interpretation at Hacettepe University.

1.7. DEFINITIONS

Cognitive baggage/Knowledge base: The term is used to define the whole body of knowledge (both linguistic and extralinguistic) acquired by an individual through life experiences, language and reasoning skills as defined by Lederer (2003).

***Complementarity**:* The term refers to the interactive and compensatory relationship between linguistic and extralinguistic knowledge.

Interpreting stages: In this study, 'interpreting stages' refer to three main stages put forth by Lederer (2003); namely, *comprehension, deverbalizat*ion, and *reformulation* (p.38-39).

***Linguistic knowledge*:** Within the scope of this thesis, this concept refers to the target language and source language knowledge of the participants on the semantic level.

Extralinguistic knowledge: In this study, the term is limited to *subject knowledge* and *contextual knowledge*.

World knowledge: In this thesis, world knowledge refers to *cognitive baggage* which is not limited to extralinguistic knowledge, yet includes linguistic knowledge as well.

Comment: The term refers to the opinions and experiences of the participants expressed as a part of the self-evaluation of their performances.

Statement: The term refers to the structured sentences of the most commonly expressed comments of the participants during the self-evaluation process.

1.8. RELEVANT RESEARCH

Knowledge impact on language use has been broadly studied in linguistics and second language acquisition. In specific to linguistic and extralinguistic knowledge, the terms such as "*word knowledge*" (Hagoort et al. (2004), "*semantic knowledge*" (Dascal, 2003), "*language knowledge*" (Dudschig et al., 2016) are used interchangeably to define linguistic knowledge while "*world knowledge*" (Dudschig et al., 2016; Martin et al., 2016; Gile, 1995; Shaffner, 1993), and "*encyclopedic knowledge*" (Shaffner, 1993; Setton,1999) and "*non-linguistic knowledge*"

(Dudschig et al., 2016; Setton,1999) are used for extralinguistic knowledge. To clarify these terms, "word knowledge" is defined as the knowledge obtained from previous experiences with language while "world knowledge" is defined as the knowledge obtained from previous experiences with the world. The studies conducted within the field of language use, cognitive aspects of language, second language acquisition and comprehension stage of language have focused on revealing to what extent each of these knowledge types affects the cognitive process while comprehending a message. Such studies put much emphasis on the distinction between word and world knowledge.

In reference to sentence comprehension, the ongoing debate offers two different processes, namely one-step or two-step procedures. The former procedure refers to the integration of both word and world knowledge at the same time during sentence comprehension while the latter refers to the priority of language knowledge which is later followed by world knowledge (Dudschig et al., 2016). One of the key studies investigating whether the reaction of human brain differs by world knowledge or word knowledge violations was conducted by Hagoort et al. (2004). In this study, participants read three different versions of sentences as their brain activities were recorded through electroencephalogram and functional magnetic resonance imaging techniques. Only one version of these sentences was correct (*'Dutch taxis are yellow'*) while one of the versions had semantic violation (*'Dutch taxis are sour')* and one had world-knowledge violation (*'Dutch taxis are white').* According to the analysis of the brain activities of the participants, it was found that the brain integrates word and world knowledge at the same time (Hagoort et al., 2004, p.440).

In a similar study conducted by Dudschig et al. (2016), how linguistic and non-linguistic violations are processed during comprehension of the sentence is investigated via EEG recording. In the research, 40 sentences were semantically violated (*'Journeys are stripy'*) and 40 sentences were also included to violate world knowledge (*'Ladybirds are stripy').* Participants were asked to react to such sentences by pushing the button in front of them to show whether each sentence is correct or not. In parallel with the results of the research conducted by Hagoort et al. (2004), no clear-cut difference was found between reactions of the participants

to semantic violations and world knowledge violations in sentences (Dudschig et al., 2016, p.48).

The above-mentioned studies were the examples for research conducted on native comprehenders. However, sentence comprehension in an L2 is known to differ from comprehension in the native language (Martin et al., 2016, p.207). Similar sentence violation method was used in the study conducted by Martin et al. (2016) on L2 readers. Participants were eighteen Spanish-English bilinguals who started to learn English as L2 at school age. The results of this study showed the simultaneous integration of word and world knowledge in second language comprehension as well.

In translation and interpreting studies, the importance of linguistic and extralinguistic knowledge is commonly reported. However, there are few studies offering empirical data regarding confirming or refuting the importance of linguistic and extralinguistic knowledge in the literature.

One of the few studies was conducted on the use of extralinguistic knowledge in translation by Kim (2006). The study mainly focused on to what extent extralinguistic knowledge contributes to translator's inference while comprehending source text. Data collection of the research included translations of the participants from L2 to L1, a questionnaire and a think-aloud study. Participants were from three different levels of translation experiences, namely professional translators, translation students and language learners who did not receive any translation course. The findings of the study showed that the use of extralinguistic knowledge led a higher quality translation. It was also found that neither better language proficiency nor more experience in translation ensured a better quality translation, but a better expert or specialized background knowledge had the utmost effect (p.297).

In interpreting, studies reporting the effect of linguistic and extralinguistic knowledge on SI performance are limited particularly to the scope of advance preparation. In one of the earliest master theses on interpreting, Anderson (1979) studied contextual and translation aspects of simultaneous interpreting. The aim of her research was to investigate linguistic and extralinguistic effects on the interpretation of a message. Participants were 12 professional interpreters. In the

experiment, three different test conditions were formed prior to the interpreting task. The participants were supplied with (1) the complete text of the speech beforehand; (2) a summary of the speech; (3) no prior information. According to the results, no significant difference was found between the three experimental conditions (p.30). In other words, prior access to linguistic knowledge did not positively affect interpreting performance. In addition, there was no significant difference between the performances of interpreting with a general idea of the speech and with the complete text of the speech. Gile (2001) puts forth that the lack of a clear-cut result in this experiment could result from the fact that the speeches used for the experiment in the study were not technical enough to test and analyze the scope of the extralinguistic effect (p.147). Lamberger-Felber and Alonso Bacigalupe (cited by Gile, 2001) conducted two other studies in parallel with the thesis of Anderson (1979). These studies did not find any significant effect of previous availability of written forms of the speeches on interpreting performance, either. However, Gile (2005) asserts that the studies conducted by Lamberger-Felber and Anderson did not reveal the general effect of extralinguistic knowledge on interpreting performance. In this sense, Gile (2005) suggests that more studies should be carried out to come to a certain conclusion about the effect of extralinguistic knowledge (p.168).

In another similar study, Díaz-Galaz et al. (2015) investigated the effect of advance preparation on SI performances of professional and student interpreters. In the experiment, the participants were divided into two research groups. One of the groups was supplied with preparation materials half an hour before the task while the other group did not have the opportunity to get prepared for the interpreting task. Contrary to the findings of Anderson (1979), Lamberger-Felber and Alonso Bacigalupe, a significant difference was found between two groups in favour of the group supplied with preparation materials (as cited by Gile, 2001). Considering the fact that the participants in that group had access to both linguistic and extralinguistic knowledge beforehand, the findings of Díaz-Galaz et al. (2015) also underscores the positive effect of linguistic and knowledge on SI performance.

The abovementioned studies are very few in number to scientifically prove the importance of linguistic and extralinguistic knowledge on simultaneous interpreting. In other words, the data obtained from these studies are not satisfactory to claim

that "extralinguistic knowledge has no effect on interpreting performance" or "the effect of linguistic and extralinguistic knowledge on interpreting performance is equal". Therefore, more empirical research is needed to come to such a conclusion.

Apart from the studies which shed light on the effect of knowledge on interpreting, to the knowledge of the researcher of the present thesis, there is no research investigating the "complementarity between linguistic and extralinguistic knowledge or the extent of such complementarity in different subject areas (e.g. technical, medical, political) so far.

The information presented in this chapter is believed to shed light on the following chapters allocated to investigate the research topic.

CHAPTER 2

THEORETICAL BACKGROUND

This chapter presents general information about the theoretical background of simultaneous interpreting. The first section of the chapter lays a general overview on SI touching upon its difference from translation, modalities, and settings as well as its development as a profession and an academic field. The second section is devoted to theoretical information which offers an insight towards the topic of this study. Four different models/theories in SI are summarized and how the importance of extralinguistic knowledge and its complementarity with linguistic knowledge are reported in the literature is dwelt upon. The final section of the chapter assessment and quality criteria of SI performances as mentioned in the literature are discussed.

2.1. A GENERAL OVERVIEW OF INTERPRETING

Interpreting is usually regarded and basically defined as an oral form of translation. Although the fact that interpreting is a special form of translation is true, the components, challenges, key factors and strategies of interpreting is much different than translation. To see the difference and understand the scope of these two siblings, yet diverse fields, one may pay attention to semantic roots of these concepts. Even the attribution of a completely different name rather than the use of "oral translation" indicates the main objective of interpreting. The word interpreter in English is derived from a Latin word *interpres* which refers to a person explaining the sense (Pöchhacker, 2004, p.9). Given that fidelity has always been a hot topic for translation studies, a translator used to be criticized or appraised for his/her TL choices depending on his/her distance to the original text. However, the nature interpreting depends on expressing the message to others who would have difficulty in understanding. Therefore, the utmost concern in interpreting is beyond the translation of words. Lederer (2003) posits that "simultaneous interpretation, on the other hand, allows us to how sense builds up gradually as sounds are heard and then forgotten message" (p.18) and to focus solely on the sense while rendering the message as SI occurs in real time, unlike translation.

Apart from its definition and objective, there are three main characteristics of interpreting which makes it a challenging task (Doğan, 2009, p.74). One of these three characteristics is *immediacy* which results from the performance of interpreting "here and now" (Pöchhacker, 2004, p.9). This component requires the immediate activation of cognitive and affective processes of interpreter (Doğan, 2009, p.74). The second component is *simultaneity* which refers to "overlapping talk" of the speaker and the interpreter as defined by Pöchhacker (2004, p. 115). The third component is *incrementality* which defines the conglomeration in short-term memory as a result of excessive use of cognitive capacity (Gile, 1995, p.170; Doğan, 2009, p.74). A good command of source and target languages, experience in the profession, familiarity with the conference environment, developed cognitive and affective skills of interpreters help them overcome such challenges. However, the risks and threats posed by SI are not necessarily related to the interpreter him/herself. Problems can result from external factors along with self-dynamics of an interpreter (Doğan, 2009, p.167). To overcome such challenges, a variety of strategies are also used in addition to SI skills of interpreters such as "skills beyond language, listening while speaking and general knowledge" (Setton,1999, p.50).

Doğan (2009) categorizes these strategies under two main titles, namely "Strategies to Avert Challenges" and "Strategies to Cope with Challenges" (pp.167-182). The strategies in the former category, such as shadowing exercise, arranging ear-voice span (EVS) and improving the number of units in short-term memory, can be applied and acquired mostly through training and practices. Strategies for averting challenges can be acquired through developing skills and enhancing the cognitive capacity of the interpreter by means of practices and education. The benefits of these strategies are analyzed within the scope of effort requirements by Gile (2002). Strategies such as shadowing exercises, regulation of EVS, improving short-term memory capacity can be helpful to balance the load on short-term memory and leave more capacity to comprehension and reproduction processes (p.172).

The strategies in the latter category, on the other hand, includes tactics that can be taught on lexical and syntactic levels (Doğan, 2009, p.172). Lexical strategies help the interpreter cope with challenges encountered on the lexical level during

interpreting while syntactical strategies aim to cope with the problems related to syntactical differences between the language pair employed in SI. Training on these strategies was found to have a significant effect on student interpreters' performances (Erkazancı, 2003). Some of the strategies that can be taught on the lexical and syntactical level can be exemplified as follows:

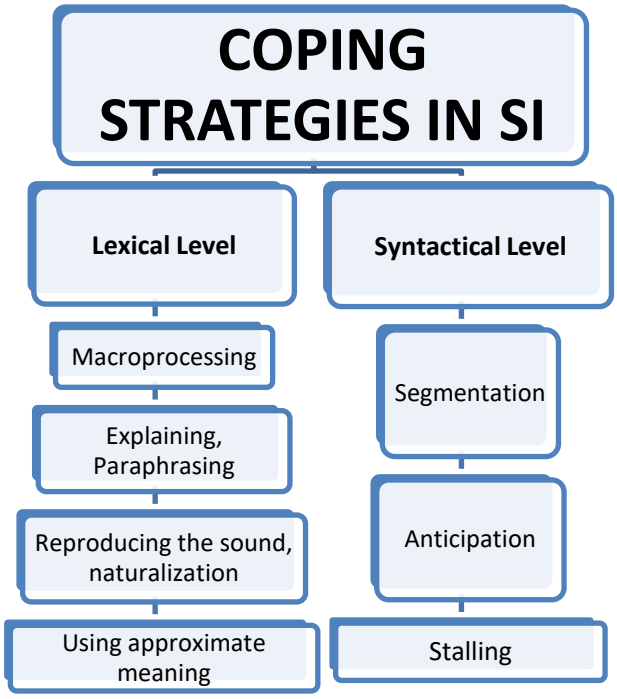


Figure 1: Coping Strategies in SI.

- ***Macroprocessing:*** The term refers to the generalization of the message through either to lessen the cognitive load on short-term memory or to collect together and simplify all unnecessary information not to bother the audience (Doğan, 2009, p.175).
- ***Explaining, paraphrasing:*** In every language pair, there can be concepts that cannot be defined through one word or phrase due to cultural differences between languages and communities. A word, equivalence of which cannot be found in the TL, can be interpreted through explaining the concept with interpreter's own words and phrases (Doğan, 2009, p.175). This strategy can be useful to prevent any loss of information, yet it can cause extra load on cognitive capacity of the interpreter (Gile, 1995, p. 2007).

- ***Reproducing the sound, Naturalization:*** This is another strategy to be applied to unknown words or concepts encountered during SI. "When encountering a name or technical term which s/he does not know or recognize, the interpreter may try to reproduce the sound as heard"(Gile, 1995, p. 207). Although Gile (1995) does not consider this strategy as an "intelligent" one (p.207), it can save the cognitive capacity of the interpreter for further stages.
- ***Using approximate meaning:*** This strategy is used when the interpreter cannot render the exact meaning of any SL unit. In such a case, interpreter's extralinguistic knowledge, as well as the knowledge of speaker's position and linguistic rules of the language pair involved in the process, can be used to give an approximate meaning (Doğan, 2009, p.176).
- **Segmentation:** In syntactically different languages (e.g. Turkish and English), speech segmentations of the SL can be divided by the interpreter to avoid the cognitive load that can be caused by extra long sentences. In this way, these speech segments can be reformulated earlier by the interpreter (Gile, 1995, p.205; Doğan, 2009, p.180).
- ***Anticipation:*** This strategy in which "predicates or other downstream elements appear to be guessed by the interpreter" (Setton, 2002, p.188), is closely related to the ability of the interpreter to predict the upcoming message. This strategy is divided into two main categories as linguistic and extralinguistic anticipation. The linguistic anticipation refers to the strategy "used for countering verb-last or head-noun-last structure" while extralinguistic anticipation is based on "external knowledge" (Setton, 1999, p. 52). The use of this strategy requires a special attention as applying this strategy solely as a 'prediction' can cause inaccurate interpreting of the source message. As Doğan (2009) posits, subject knowledge and the speaker's position should be well-known to apply this strategy (p.181).
- ***Stalling:*** In this strategy, "interpreters draw on inferred or associated knowledge to produce structure autonomously" (Setton, 2002, p.188). This strategy is based on the use of neutral materials that can be defined as sentences or segmentations used to avoid the silence. Neutral materials do not add any new information to the TL message, yet can be applied by using

> words which do not carry message such as *'by the way, meanwhile, in this regard'* or by paraphrasing the previous sentence (Doğan, 2009, p.181-182).

An interpreter, while dealing or averting challenges during SI, also needs to be alert against real-time environmental challenges. SI takes place in a social environment which includes many shareholders of the interpreting process such as speaker(s), audience, technical personnel and even booth partner. In such an alive environment, the message transmitted to the interpreter who is expected to transmit it in TL to the audience cannot be solely limited to verbal elements. Non-verbal messages are also taken into consideration by the interpreter to ensure a healthy and dynamic communication between parties. The tone of voice and body language of the speaker, background knowledge and familiarity of the audience to the topics, physical problems such as a participant's speech started without a microphone, in-booth communication and sharing with the colleague are all effective factors for an interpreting process.

In a nutshell, using only certain strategies or developing only a few skills would be unsatisfactory to fulfill such a challenging activity and overcome the problems that result from the complex nature of this profession since simultaneous interpreting is a multi-dimensional activity that requires multitasking skills of the interpreter on a variety of dimensions.

2.1.1. Modalities and Settings of Interpreting

The proliferation of communication demands in foreign languages has led the evolution of modalities (forms or types) for interpreting.

There are four modalities commonly recognized for interpreting, namely simultaneous interpreting, consecutive interpreting, sight translation and whispering. On the other hand, Doğan (2009) classifies the modalities of interpreting under two main categories; simultaneous and consecutive interpreting (p.47).

These modalities are performed in various settings defined as the social interaction of the interpreting environment by Pöchhacker (2004, p.14). The transformation in the social context of interaction has emerged new settings that did not exist before (e.g. health interpreting, court interpreting). In this sense, settings of interpreting depend on the place where the interpreting activity is performed. The following figure draws a general framework for the classification of modalities and settings of interpreting. The present study focuses on the main topic in specific to the simultaneous modality of interpreting.

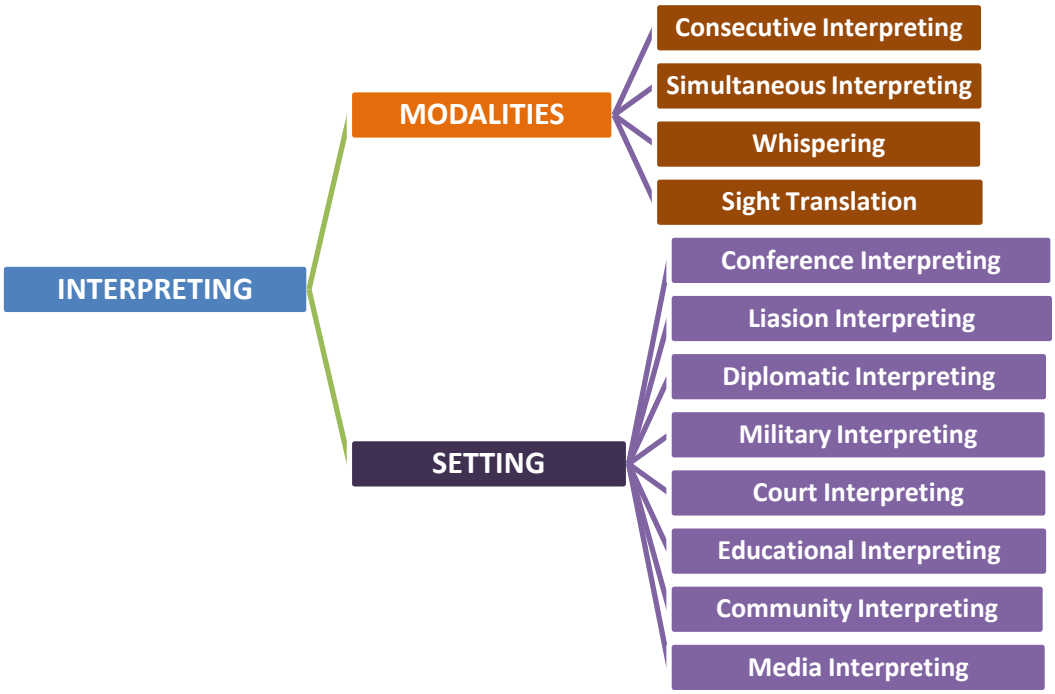


Figure 2: Modalities and settings of interpreting (Doğan, 2009, pp.48-60; Pöchhacker, 2004, p. 16).

2.1.2. History of Interpreting As a Profession

Early interpreting activities and development of interpreting as a profession shed light on the development of this profession as an academic discipline. Interpreting, as a way of communication, can be traced back to as far as the emergence of different languages and interactions between different communities. The first evidence of the presence of an interpreter can be found in Ancient Egyptian and

Greek civilizations (Angelelli, 2004, p.8). Gardiner reports that; "as early as 3000 BCE, the Egyptians had a hieroglyph signifying 'interpreter' or 'interpreting'" (cited by Delisle and Woodsworth, 2012, p.248). In further periods, at end of the era of Pyramids in Ancient Egypt, interpreters became more and more visible. Aswan Elephantine carried the title of 'overseer of dragomans' in many scripts (Hermann, 2002 p.16). The use of this title indicates the importance and appreciation attached to interpreters. Delisle and Woodsworth (2012, p.248) reports that Vermeer also studied on interpreting references in ancient Rome and Greek literature and found that ancient Greeks and Persians had their interpreters with them during negotiations. Hermann reports that in Roman Empire, which was officially bilingual, interpreters are known to be crucial for the communication with foreign soldiers in the army (Doğan 2009, pp.10-11). In addition to the use of interpreters in the country, Roman Empire used interpreters for the administration of conquered lands as well since they assumed learning the language of the conquered people to be an undignified act. In further periods of history, the need of interpreters increased in parallel with the accelerated interaction between foreign communities. The earliest modality of interpreting was consecutive applied between small groups or representatives of certain societies such as Native Americans and explorers, traders, defendants, and counter-plaintiffs, administrators and minorities (Angelelli, 2004, p.8; Doğan, 2009, p.11-14). Despite its ancient roots and use in diverse fields, interpreting was not acknowledged as a profession and interpreters were individuals who knew a foreign language. These people were engaged in many activities other than interpreting such as guidance, embassy, and even peacemaking.

Albeit early interpreting activities in ancient times, conference interpreting took its place on the stage of history only in the 20th century. In this era, the development of international organizations accelerated and thus language experts started to take part in interpreting profession (Seleskovitch, 1978, p.3). The need for a conference interpreting did not appear until the end of World War I since French was the *lingua franca* and also the only diplomatic language used in all diplomatic meetings (Gaiba, 1998, p.28). After the long-term monopoly of French as the diplomatic language, English acquired its status as an official language in international organizations (Baigorri-Jalón, 2006, p.102). Baigorri-Jalón (2014) asserts that

status of the French language as the official diplomatic language changed during the preparations for Paris Peace Conference where both French and English were accepted as official languages after long debates (p.247). Co-official languages brought along the need for translation and interpreting during the conference. Held in 1919, Paris Peace Conference was the first multilateral conference where consecutive conference interpreting was used (Baigorri-Jalón, 2014; Pöchhacker, 2008 p.27). Nevertheless, the task of interpreting was not perceived as a definite profession; instead, diplomats and civil servants who were fluent in two languages were entitled to establish communication between two parties. Delegates and participants needed to bring their interpreters with them. For instance, Prince Faisal of Arabia is known to have brought Colonel Lawrence, also known as Lawrence of Arabia, with him (Bonsal, 1946 in Baigorri-Jalón, 2014, p.24). Interpreting at this conference was a spontaneous and natural result of the recognition of multiple languages as official diplomatic languages.

The first conference hosted the simultaneous interpreting was held eight years after the Paris Peace Conference. Slow nature of consecutive interpreting was much time-consuming for the participants of multilateral and international organizations since interpreter needs to wait until the speaker stops speaking.

As a modality of simultaneous interpreting, whispering interpreting was used in the conferences of International Labour Organization (ILO) (Doğan, 2009, p.21; Gaiba, 1998, p.28). The interpreter was placed next to the speaker to hear the speech better to eliminate the risk of errors and misunderstanding and s/he was expected to interpret the message by whispering the microphone next to the speaker. This method was also unsatisfactory since interpreters had to listen to the speaker with naked ear while interpreting and many interpreters working at the same time caused a great noise in the rostrum (Baigorri-Jalón, 2014, p.136). These challenges revealed the need for professional equipment for listening and speaking at the same time for interpreters, speakers and other participants. Dissatisfaction with previously applied forms of interpreting led to the demand for a faster, more professional and convenient way of interpreting that we see in booths today.

The basic SI system including microphone and headphones, the Filene-Finlay equipment, also known as Hushaphone, was first described by André Kaminker and used in many conferences from the 1920s and 1940s (Baigorri-Jalón, 2014, pp.30-31). However, the use of this equipment for SI was not as technically advanced as it is today. Gaiba (1998) explains the process as follows;

> At the League of Nations and the ILO, for example, the various interpreters would take notes on the original speech, as for the consecutive interpretation; after the end of the speech, one of the interpreters, usually the French interpreter, would take the stand and translate consecutively into his language. At the same time, the other interpreters, sitting in the booths and speaking into their microphones, gave their version of the speech in English, Spanish, etc., reading from their notes (p.31).

As can be understood, interpreting was simultaneous with other interpreting tasks, albeit not with the original speech. The period indicating the transition from consecutive interpreting to SI in today's sense was the end of World War II and specifically the Nuremberg Trials. The Trials lasted for almost a year between 1945-1946 and held by the Allied forces (Great Britain, France, the Soviet Union and the USA) of the Word War II against the inductees of the Holocaust. The involvement of multiple languages required less problematic and more smooth way of communication other than consecutive and whispering interpreting during the trials. Colonel Leon Dostert, who had already known about disadvantages of Finele-Finlay system, proposed to use the same system with certain modifications to make it *spontaneous* and *immediate* tool for interpreting to be conducted in a booth (Gaiba, 1998, p. 35). Although some people like Kaminker were skeptical about the use of this system during the trial since it would not be possible to check the accuracy of the translation of testimonies, the use of the system shortened the duration of trials.

Image 1: Nuremberg interpreters in glass booths.

Recognition of interpreting as a profession can be attributed to the foundation of AICC (Association internationale des interprètes de conférence) in 1953. Today, the Association still devotes effort to promote high standards in the profession of conference interpreting and to ensure a sound contact between speakers, interpreters, trainers and organizers. Considering the lack of such organizations in many subfields of interpreting (e.g. community interpreting, telephone interpreting etc.), more of such occupational associations are needed for the visibility of conference interpreting as a separate discipline and interpreters as professionals in the sector.

2.1.3. History of Interpreting As an Academic Discipline

Academic studies on interpreting only started following the recognition of interpreting as a profession in the 1950s as mentioned in 2.1.2. Gile (2001) defines four categories for periods of academic research in interpreting. These categories are; early writing, experimental, practitioners' and the renewal period. In the early writing period (1950s-1960s), personal writings of the interpreters were not genuinely academic studies. Instead, these were more like diaries for the interpreters who started to write down their experiences and opinions about the processes they went through during interpreting (p.42). Although the first academic study found in the literature is Eva Paneth's MA thesis titled

"*Investigation into Conference Interpreting*" and published in 1957, the pioneer of academic studies in the field is considered Jean Herbert with his work titled "*The Interpreter's Handbook*" published in 1952 (Pöchhacker, 2008, p.27).

Studies of the experimental period (1960s-early 1970s) were conducted by the scholars from psychology and psycholinguistics. Simultaneous interpreting was analyzed through its psychological and psycholinguistic aspects. Further research did not confirm the results and methods of these studies.

In the practitioners' period (late 1960s-early 1980s), studies were conducted by interpreter trainers as well as interpreters. In this period, the first Ph.D. thesis and more than 20 MA theses were completed. These studies were mostly theoretical and non-empirical as a result of the fact that interpreters adopted a defensive attitude against linguistics, psycholinguistics and cognitive sciences and conducted their studies in isolation of other disciplines.

The last period in the classification of Gile (2001) started in the mid-80s and is still ongoing today. The new approach toward interpreting, the theory of sense (see 2.2.), required scientific and empirical results. In this period, studies were mostly conducted by practitioners in close contact with other disciplines which had been once neglected. Interdisciplinary aspects of interpreting were materialized by the efforts of Barbara Mocer-Mercer to start up the first international peer-reviewed journal (*Interpreting*) in this field. Editors of the journal included scholars from diverse fields such as cognitive science, neuroscience and psychology (Pöchhacker, 2008, p.32).

In our day, the role of the interpreter is not limited to being language expert. As suggested by Angelelli (2004), interpreters are deemed to be partners in conversations and interactions. Since the visibility of interpreters in courts, medical settings, immigration and police office increases day by day, academic research in interpreting has gained a sociolinguistic perspective (pp.13-14).

The developments of interpreting as a separate academic discipline indicate various periods as put forth by Gile or turns as named by Pöchhacker (2008).

Regardless of the names of different stages that interpreting has been through, it is clear to see the progress achieved in this discipline by means of tremendous efforts of a good number of practitioners, trainers and scholars.

2.2. COGNITIVE MODELS AND APPROACHES IN SI

Various aspects of simultaneous interpreting have been investigated through various models based on theoretical knowledge in academic studies. These models focus on different aspects of the phenomenon by means of bringing cultural, cognitive, sociological approaches and so on. This chapter only includes interpreting-related approaches which can shed light on the importance of linguistic and extralinguistic knowledge in interpreting as well as complementarity between them.

2.2.1. Gile's Effort Model

SI is often assumed to be challenging and difficult by students, novice and professional interpreters and scholars in this field. A case study (1989) conducted by renowned educator and scholar Daniel Gile to investigate the SI performances of interpreters confirm this assumption. In this case study, a reputable professional interpreter was asked to interpret a slow, non-technical speech divided into segments of 70 seconds. Minimum 10 segments were found incorrect or clumsy. In another study, 10 professional interpreters took place in the experiment (Gile, 1995, p.157). Participants interpreted a speech lasted less than 11 minutes and one or two of the interpreters interpreted each segment incorrectly. The speech was interpreted twice and the same mistakes were found as in the first interpreting performance. Although the reason for repeating the same mistakes despite being familiar with the text was not explained, these studies show that SI is a challenging task (Doğan, 2009, p. 146). Gile, based on his observations, his studies and other studies in the field, explains the frequent omissions and mistakes during SI performance of not only trainees but also professional interpreters through Effort Model. This model is "based on the principles of cognitive sciences" (Hu, 2011, p.195) in relation to the concepts of 'automatic' and 'non-automatic' operations. Accordingly, non-automatic operations require attention while automatic operations

are fast (Gile, 1995, p.159). The fundamental operations taking place in SI such as detecting an SL unit, storing in short-term memory, checking the accuracy of the message in TL are non-automatic operations that require a cognitive 'effort'.

According to Gile's Effort Model, simultaneous interpreting, as a non-automatic activity, requires a certain level of 'cognitive energy' which is limited in nature. The complex structure of this type of interpreting activity, on the other hand, consumes all of this energy and requires even more. At a point where an interpreter lacks this energy, an overload occurs, which consequently leads to errors in rendering the message.

He puts forth three main components of SI, being listening and analysis, speech production and short-term memory. He names each of these components as 'efforts'.

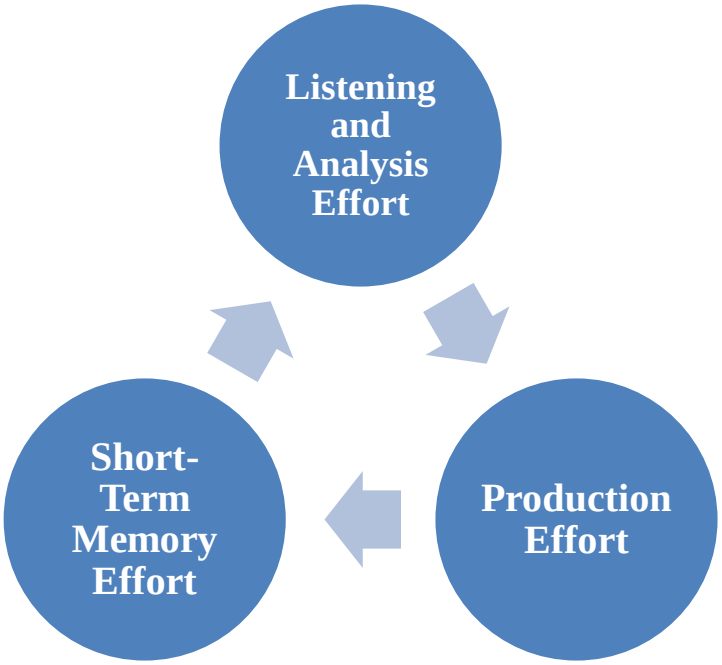


Figure 3: Three components of the Effort Model.

(a) Listening and Analysis Effort (L): In the initial listening stage, there is a sub-conscious recognition of SL speech. However, recognition of a word requires the analysis of acoustic characteristics of what is heard. This fact alone is sufficient to

categorize this component under non-automatic operations. In addition, this component does not entail solely recognition of words on the lexical and syntactical level, analysis of the meaning is also required. Linguistic knowledge can be meaningful as long as it can be associated with world knowledge. Therefore, terminology knowledge and extralinguistic knowledge along with experience and problem-solving skills are needed for a successful comprehension process of SI (Doğan, 2009, p.148).

(b) Production Effort (P): The following stage, Production Effort refers to cognitive effort spent during the process of rendering the message into TL. This process includes "speech planning and the performance of the speech plan, including self-monitoring and self-correction where necessary" (Gile, 1995, p. 163). Speaking requires effort itself alone since the speaker tries to make the speech 'error-free' (Holmes, 1988, p. 324). Hesitations during the production process are clear indicators of this effort. The simultaneity of speaking with listening and analysis processes makes this phase even more challenging. The syntactic and grammatical difference between SL and TL, lack of lexical structures needed in TL, mispronunciations and accent of the speaker, lack of extralinguistic knowledge and terminology knowledge of the interpreter also complicate the production process. All these factors show that production is also non-automatic operation within SI and thus consumes the cognitive energy of the interpreter by requiring more effort.

(c) Memory Effort (M): The final component called the Memory Effort refers to short-term memory processes during interpreting. Short-term memory is operated during the interval between recognizing the speech and producing the message. Speaker-related problems such as unclear speech, speaker's accent and speaking pace, as well as linguistic differences between SL and TL, may extend the period of this interval and put an extra burden on short-term memory until the reformulation phase starts. Short-term memory operations are non-automatic since it is not possible to get automated on certain processes because different operations are needed for each information stored in memory to be used later (Doğan, 2009, p.150).

To summarize, the abovementioned three concepts are the main components of the Effort Model. In addition, there is also another effort, Coordination Effort (C), needed to be employed for the continuous coordination of these three efforts. Accordingly, stages of the SI based on the Effort Model can be presented as follows;

Figure 4: Stages of the Effort Model.

This figure shows that SI includes these operations, respectively. First of all, a speech is recognized as words and comprehended as a message in the listening and production effort (L), then the relevant information is kept in short-term memory (M) and the message is recalled from the memory for rendering it into TL in production effort (P) along with the use of coordination effort (C) to bring all these efforts together during the performance. Each of these efforts requires cognitive capacity which should not overpass the current mental capacity of the interpreter for a successful interpreting activity. Accordingly, following requirements must be met for a successful SI activity;

Figure 5: Capacity Requirements in SI.

TR Total processing capacity requirements
LR processing capacity requirements for L
MR processing capacity requirements for M
PR processing capacity requirements for P
CR processing capacity requirements for C

According to the figure presented above, no processing capacity requirements should exceed the processing capacity available. For example; the relationship between the processing capacity required and the processing capacity available for L should be like as follows: LR < LA, where LA is the processing capacity available for L.

Otherwise, "a situation of saturation arises" (Gile, 1995, p.170). The reasons for reaching a saturation point can be "a rapid and dense speech delivered by a speaker" (Gile, 1995, p.170), "high information density, read texts, unknown terms or concepts, left branching for strings of modifiers or embedded sentences" (Ricarrdi, 2005, p.762). In this case, processing of more information units is required which may consequently overpass the cognitive capacity of the interpreter. However, saturation may occur even when the cognitive capacity of the interpreter is not overpassed. The interpreter may direct his/her cognitive energy to error-free reformulation; in this case, the energy needed for the incoming Listening & Analysis Effort may be consumed in advance. To ensure the smoothness of the operations, interpreters should be aware of the fact that their cognitive capacity is limited (Gile, 1995, p.173) and a successful SI performance requires the logical use of this capacity through "constant attention and the ability to divide cognitive resources among the processes" (Ricarrdi, 2005, p.762).

This model offers a means to explain the problems that can be encountered during simultaneous interpreting. Information-dense speeches, technical problems that cause difficulty in hearing the speaker, different syntactical languages used as TL and SL during the conference bring an extra burden on the cognitive capacity which in the end, leads to saturation quickly. Unknown words or proper nouns involving these unknown words encountered during interpreting also bring a burden to the capacity by keeping the memory effort occupied for a long time (Doğan, 2009,

pp.153-154). The better knowledge of linguistic and extralinguistic knowledge can prevent encountering completely new knowledge during SI which can lessen the burden on memory effort. However, it is not always possible to know every linguistic unit or subject and contextual information to be delivered in a speech. In such a case, complementarity between two types of knowledge which suggests that either linguistic or extralinguistic knowledge can compensate the lack of the other should be remembered. The effective division and coordination of the cognitive capacity of the interpreter can be used in case of the lack of linguistic or extralinguistic knowledge to ensure the complementarity between them. In this sense, the interpreter can focus more on listening & analysis and production effort when encountered unknown linguistic units in order to acquire knowledge from the context instead of consuming all cognitive energy on memory effort to remember the accurate meaning of the particular word(s). In case of a lack of extralinguistic knowledge, on the other hand, the interpreter should remember that certain level of linguistic knowledge can help to comprehend the message of the speech which can be ensured by focusing more of the cognitive capacity on the analysis effort.

2.2.2. Massaro's Model

Time constraint feature of SI brings limitation to memory capacity and information processing time. These limitations are believed to be the most challenging aspect of the profession and attract the attention of various academic disciplines such as neuropsychology, neurolinguistics and psycholinguistics to conduct research on SI (Doğan, 2009, p.127). Massaro's (1975) model is one of these studies that aims to explain the whole process of interpreting by investigating the cognitive stages. The information processing model of Massaro (1975) aims to investigate the cognitive stages of information processing during SI by examining the flow of operations through a schema (see Figure 6).

This model starts with the input of SL as sound waves and ends with the output in TL. As presented in Figure 5., every diamond symbol refers to a decision point for the interpreter. The process continues if the decision is YES; and stops and goes back to the previous stage if the decision is NO (Moser, 1978, p.354).

The model can be divided into three main parts; being, (a) Initial Processing Stages, (b) Generated Abstract Memory and (c) Organization of Semantic Information in an Interpreter.

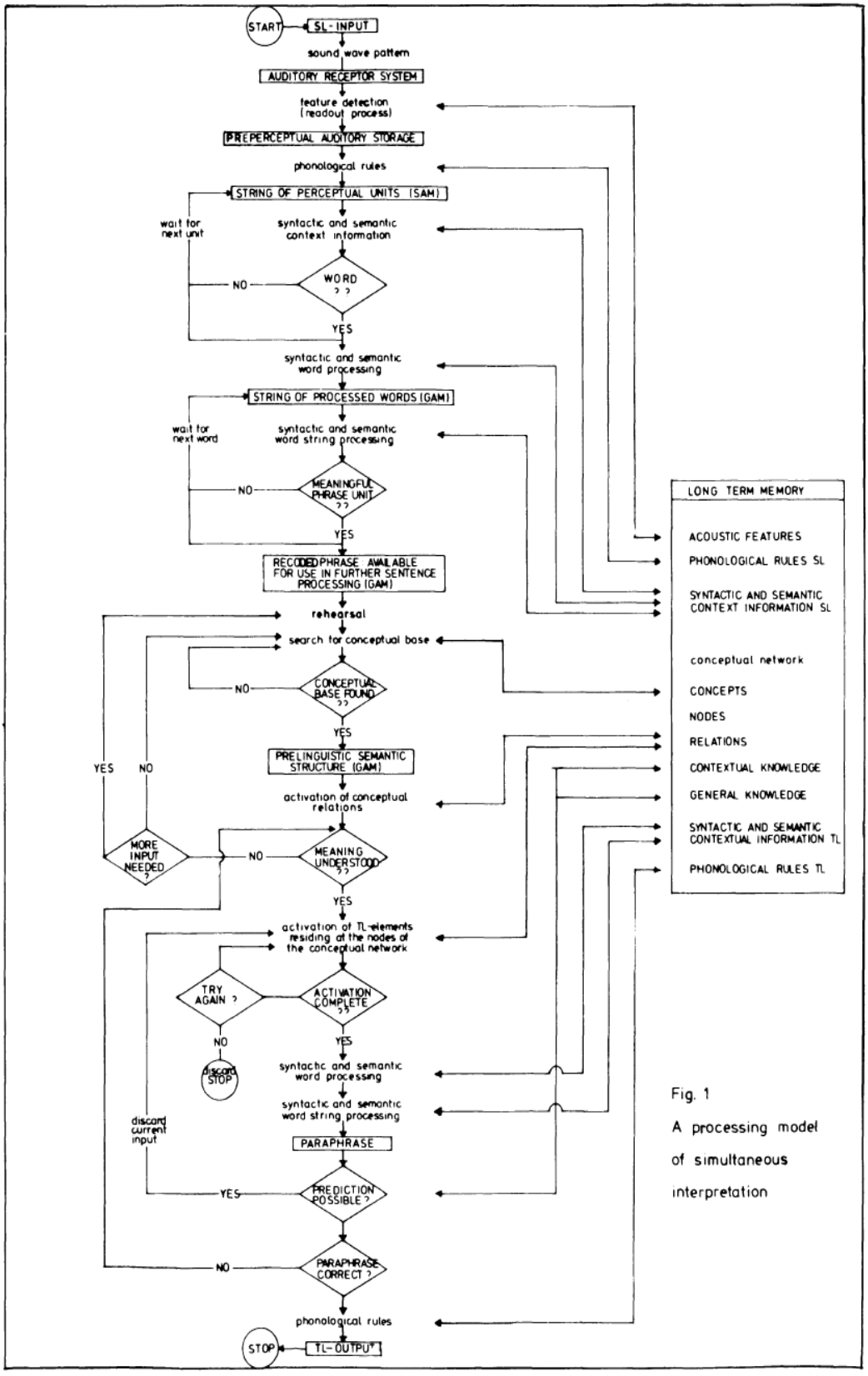


Figure 6: Massaro's Model (cited by Moser, 1978, p. 535).

a) Initial Processing Stages: The first phase comprises the arrival of a sound to the ear. Here, the sound is processed to determine whether the acoustic feature of the sound is available or not. The obtained information is stored in Preperceptual Auditory Storage. This storage includes phonological rules of SL. After the synthesis of the sounds into syllables, they are transformed into words. At this point, the interpreter needs to respond the question WORD?. Considering both semantic and syntactic cues, if the answer is yes, the loop continues. Various factors such as mispronounciation of the sound or technical sound problems may prevent interpreter from identifying the sound as a word (Doğan, 2009, p.132). In some other cases, identification of a word might be delayed for a better understanding. In such cases, the answer NO takes the interpreter back to String of Perceptual Units to resolve the ambiguity of the unit (Moser, 1978, pp.354-356).

Identification of a word can depend on terminology knowledge of the given word as well as the extralinguistic knowledge. For example, all linguistic units of "There is no conflict of interest in my study" can be known to the interpreter. However, the identification of a word is affiliated to its representation in the world, and thus extralinguistic knowledge about the fact that the use of the phrase *'conflict of interest*' can differ in a medical conference from political context is needed for the interpreter to successfully identify the phrase as a meaningful linguistic unit. On condition that the interpreter knows the meaning of the phrase *'conflict of interest'*, yet has never heard of the use of the phrase in a medical context, s/he may not build the link between her/his linguistic and extralinguistic knowledge on the contextual basis. Therefore, the question WORD? in Massaro's model can be NO within the cognitive loop of the interpreter and thus the interpreting of the sentence can fail. The knowledge of *'conflict of interest*' in medical research, on the other hand, can make the answer YES and further information processing stages can be followed successfully.

b) Generated Abstract Memory: At this second stage, recoding, cognitive rehearsal and feedback operations continuously follow each other (Moser, 1978, p. 356). The following stages use the information stored as abstract units in the short-term memory at this point. Miller (1956) suggests that generated abstract memory can hold 7±2 units. However, this case is different for an interpreter compared to a person who only listens or speaks (Doğan, 2009, p. 133). Considering the limited

cognitive capacity, devoting more capacity to a certain stage would limit the capacity needed for the next stage. According to Moser (1978), this is why novice interpreter often run out of time during SI, since they pay more attention to TL production which consequently reduces the capacity needed for generated abstract memory (p.356). However, a successful SI depends on the swift and effortless transition between cognitive operations (Doğan, 2009, p.134). Such transitions can be ensured through the less need for keeping the new information. At this point, the wider is the extralinguistic knowledge of the interpreter, the quicker can be these transitions since the burden on short-term memory capacity will be less (Doğan, 2009; Moser, 1978).

c) Organization of Semantic Information in an Interpreter: The model has shown the comprehension of the SL message through acoustic and phonological cues and the storage of the information in short-term memory. The following stage is to detect whether the information stored can be connected to certain conceptual constructions through both "intralingual (between concept and word in one language) and interlingual links (between the language-specific nodes of the same concept)" (Moser, 1978, p.358). Following the activation of relevant concepts, the interpreter may reach a conceptual agreement and express this agreement in TL. One of the strategies that can be employed at this stage is prediction. The answer YES to the question PREDICTION POSSIBLE? helps interpreter discard the ongoing input. Exposure to both SL and TL, syntactic, contextual, extralinguistic knowledge eases to give the answer YES to this question. According to Moser (1978), the more an interpreter knows, the more s/he can predict, and the better s/he knows, the faster s/he can predict (p. 360). At the very final stage, the interpreter should hear her/his own voice to accomplish a quality interpreting task and to check the message rendered in TL (Doğan, 2009, p. 139). As Moser suggests (1978), processing the output of the interpreter should be like the processing of the SL message as far as the limited capacity allows. Otherwise, the processing should stop at the STRING OF PERCEPTUAL UNITS.

As presented in this model, a successful SI output depends on the rapid and smooth transition between cognitive processes. Sufficient background knowledge about the subject stored in the long term memory can lessen the burden on the short term memory. In other words, the more pre-existing knowledge the interpreter

has, the less s/he needs to keep the brand new information in short-term memory (Doğan, 2009, p.134). Accordingly, developed linguistic and extralinguistic knowledge of the interpreter can accelerate the transition between the stages of information processing, thus leads to a higher quality SI process. When either the given linguistic or extralinguistic knowledge is unknown, the interpreter should be aware of the fact that certain extent of complementarity can be achieved between two types of knowledge. The effort of the interpreter to compensate the lack of one type of knowledge with the other can ensure a relatively good comprehension of the message, a higher quality interpreting process and output.

2.2.3. Interpretive Theory

The perception of translation as a rendition between two linguistic signs has changed by the emergence of cultural turn in the early 1980s. The cultural, social and psycholinguistic aspects of translation have been discussed so far. One of the theories which disyoked translation from solely linguistic approach has been the interpretive theory also known as 'theory of sense'. This theory was developed by Seleskovitch and Lederer from the Ecole Superieure d'Interpretes et de Traducteurs also known as 'the Paris School'. In this theory, the main focus is on 'sense' as a non-verbal unit rather than a linguistic meaning. Lederer (2003) considers sense to be beyond lexical and grammatical meanings of words (p. 11). She explains sense as the meaning what an interpreter comprehends and what is kept in the memory of the interpreter after the words vanish.

To illustrate three stages during interpreting as put forth by the Interpretive Model, see the following figure:

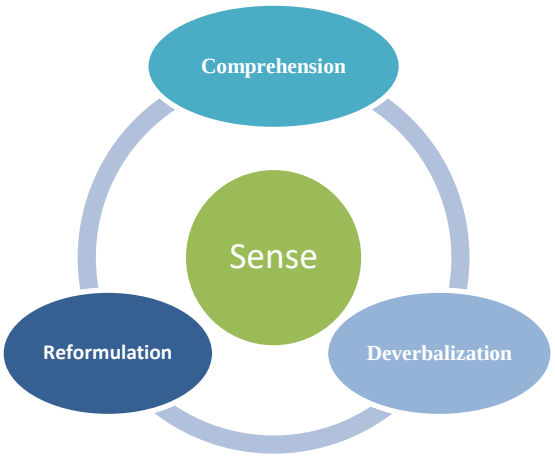


Figure 7: Three Stages of Interpreting by Interpretive Theory.

a) Comprehension: The comprehension of the sense depends on a satisfactory shared knowledge between the interpreter and the speaker. According to Seleskovitch, graphic signs of a language do not carry the meaning and they are just symbols for an interpreter. The meaning is what the interpreter remembers through these symbols (cited by Lederer, 2003, pp. 14-15). Seleskovitch (1976) suggests, comprehending the units of sense can be possible only through the connection between the new information offered by the speaker and the previous knowledge of the interpreter (p.64). In case of the lack of previous knowledge, the new information is ignored (Seleskovitch, 1989, p.49). Chernov (2004) summarize the grasping the sense as follows;

> This is a case of multiple interactions: between linguistic factors, which reveal the contextual meaning of a word through the foregrounding of semantic components based on their joint appearance, and extralinguistic factors; and between verbal mental processing and non-verbal processes involving the knowledge of the world and of the communicative situation. (p.40)

In this context, comprehension of the essence (*sense*) of a message cannot be affiliated solely to lexical and syntactical knowledge. "Rather, based on their comprehension of meaning conveyed by the source text, interpreters complement the meaning by virtue of various kinds of extra-linguistic knowledge" (Hu, 2011,

p.194). The knowledge expected to be shared between interlocutors is encyclopedic knowledge and contextual knowledge (Salama-Carr, 2008, p.146).

Encyclopedic knowledge is used as an equivalent to world knowledge and cognitive baggage by Lederer. "World knowledge or encyclopedic knowledge includes all linguistic and extra-linguistic knowledge stored in our memory" (Lederer, 2003, p.30). Lederer (2003) divides world knowledge into two categories being linguistic and extra-linguistic knowledge (p.29) and she suggests that components of the cognitive baggage can be acquired through:

1. life experiences
2. language (reading, education, debates etc.)
3. reasoning

Contextual knowledge, on the other hand, is defined as a cumulative knowledge acquired during listening and interpreting the speech (Lederer, 2003, p. 225).

b) Deverbalization: Placed at the core of the translation process (Lederer, 2003, p.39), deverbalization is a cognitive process employed between the stages of understanding and reformulation of the speech. This process refers to disassociating SL message from its linguistic signs and grasping the sense. After the data disappear (e.g. speaker finishes his sentence), non-verbal sense remains in the cognitive memory of the interpreter. Deverbalization stage plays the major role for the appearance of the sense (Lederer, 2003, p.94). It is possible to translate the meaning based on what is remembered as a '*sense*' in simultaneous interpreting since words are constantly flowing and the interpreter usually does not have time to take notes and thus needs to interpret based on the essence of his/her understanding. As Lederer (2003) reports; "the signs of the discourse disappear with the sound of the voice but the addressees – and the interpreter – keep a deverbalized memory, an awareness, of the ideas or facts evoked" (p.12). The deverbalization process is deemed significant by Lederer (2003) since it prevents *faux amies* that could be a result of transcoding and calques used commonly when the real meaning is not understood (pp. 115-117).

c) Reformulation: At the final stage of the interpreting process, the deverbalized sense of SL is transmitted into TL. At this point, interpreting is based on the grasped sense rather than the words used in SL to transmit the message. After the message is rendered in TL, verification stage should also be employed to ensure that the message delivered in TL can be easily perceived by the audience as well. (Lederer, 2003, pp.38-39).

As mentioned in every three stages of the interpreting, the main focus of interpretive theory is *sense,* which cannot depend solely on linguistic knowledge, since extralinguistic knowledge is essential to grasp the *sense*. As suggested by Setton (1999), this theory emphasizes the importance of context and prioritizes the speaker's intent rather than the linguistic structure (p.3).The significance of the interpretive theory is its foregrounding of extralinguistic knowledge and context as reported by Pöchhacker and Shlesinger (2002, p.145);

> [interpretive theory] draws attention to the role of inferencing based on linguistic and extralinguistic background knowledge, and to the ways in which the underlying meaning, rather than the surface form of the message is at the heart of interpreting in terms of both the process and the product (p.97).

2.2.4. Chernov's Probabilistic Anticipation Model

Probability anticipation is originally a psychological phenomenon defined by the principle that experiences of human beings lays the ground for further hypotheses of upcoming events by Feigenberg and Zhuravlev (cited by Chernov, 2004, p. 92). Chernov (2004) builds a connection with this concept and SI in his model. Accordingly, an interpreter's brain hypothesizes upcoming verbal and semantic components of discourse during SI (p. 93). Since such a hypothesis takes place at the listening stage, it is a subconscious operation as mentioned by Gile (1995) for Listening & Analysis Effort in his model (p.160). The probability of anticipation depends on the level of redundancy. Chernov also emphasizes redundancy as the key element in comprehension during SI. Redundancy is defined as non-informative and occasionally unnecessary phrases used to fill gaps in a discourse by Doğan (2012, p.124). Also known as co-reference, redundancy can be employed by the speaker in a variety of ways such as the use of repeated word,

synonym, paraphrase and so on (Chernov, 2004, p.33). Constantly repeating phrases especially in political speech can set an example for redundancy in a speech. Redundancy can be most commonly found in political speech. The most common phrases in opening sentences such as *'I would like to greet you all with my whole-heartedly feelings'*, *'Taking this opportunity, I would like to welcome you all once again'* can also exemplify the use of redundancy. Non-informative structure of such sentences gives time to the interpreter to deal with the stress and enables her/him to anticipate the next segment of the speech. This is why SI of poetry is considered impossible due to the low level of redundancy, which makes every single word matters and hampers challenging multitasking processing of the interpreter (Chernov, 2004, p.95; Doğan, 2008, p.83). The meaning that can be perceived based on the redundancy is a result of the interaction between language knowledge and cognitive thesaurus (background knowledge) of the interpreter (Chernov, 2004, p.57). However, comprehension is not necessarily composed of explicit meaning. A certain level of inferences is needed to comprehend implicit components of a discourse. Chernov (2004, p.60) suggests that comprehension begins with the interaction between the interpreter's perception of semantic units and linguistic, cognitive, situational and pragmatic inference.

a) Linguistic Inference: As the title suggests, it is based on the interpreter's linguistic knowledge of SL. For example: *'We, as the Parliament, are ready to take necessary steps….*' the comprehension of "*we*" in the sentence as "*the members of the Parliament*" can be possible through linguistic inference. This inference is related to the grammar knowledge of the fact that plural form of the first person pronoun may refer to a group of people (Chernov, 2004, p.61).

b) Cognitive Inference: This type of inference based on background knowledge, cognitive thesaurus of the interpreter to grasp the sense. Cognitive inference is known to be closely associated with linguistic inference except for very technical discourse that requires the knowledge of a very specific knowledge of a terminology. Independently from linguistic knowledge, background knowledge is related to the life experiences and world knowledge of a person.

c) Situational Inference: Situational inferences are based on the knowledge and awareness of the current moment and place. Considering the vigorous atmosphere

in a conference hall, in time dialogues or speeches are always expected. When a foreign speaker calls for "*Lights, please*!", depending on the luminosity of the environment, interpreter needs to translate this sentence as *'Turn on the lights'* or '*Turn off the lights'* for the technical staff (Chernov, 2004, p. 71) Such decision between these two options is related to the situational inference.

d) Pragmatic Inference: It can be achieved by the interpreter taking speaker's certain status and position into consideration. In this way, communicative purpose of the speech/segment needs to be comprehended to determine the pragmatic intention of the speaker. For example, the Turkish phrase '*Bilmiyorum' (Literal translation: I don't know)* can have two meanings; either 'I *do not have information about it*' or '*Well, let me think about it for a second*' (Doğan, 2009, p.135). At this point, the interpreter should be aware of communicative purpose and pragmatic meaning to make the right decision.

This model of Chernov (2004) underscores the importance of linguistic knowledge and cognitive thesaurus of the interpreter and thus it is recommended that extralinguistic knowledge of interpreter candidates should be improved for an easier anticipation process and development of linguistic skills should be supported to ensure the needed automatisation in SI (p.199).

Considering the role of redundancy in anticipation as reported by Chernov (2004), this study includes political text involving various examples of redundancy as test material in addition to technical and medical texts that are more information-dense text types in order to find the effect of redundancy on complementarity between linguistic and extralinguistic knowledge.

2.3. LINGUISTIC AND EXTRALINGUISTIC KNOWLEDGE IN SI

A quality SI outcome, accurate rendering of a source message into a target language, can only be possible by means of successfully completing every three stage of simultaneous interpreting. A good "*Comprehension*" which is the preliminary stage of SI process (Lederer, 2003) determines the quality in upcoming

stages (*Deverbalization* and *Reformulation*). Comprehension of a message is achieved through building links between linguistic elements and non-linguistic elements (Dancette, 1997). In other words, people put in use not only "their knowledge of concepts expressed in lexical items", but also "their knowledge of how such items are linked conceptually in phrases and sentences and in the outside world" during comprehension process (p.78). The use of linguistic and extralinguistic knowledge has been a topic of academic studies within the field of interpreting studies since these two knowledge types are the fundamental elements of the initial stage of interpreting as well as being determinant quality factors in every other stage. Academic studies dwelling on the knowledge in SI involve a variety of terms to define linguistic and extralinguistic knowledge.

The variety in the use of these two main types of knowledge is related to the different classification of knowledge in different aspects of disciplines. For instance, the term *world knowledge* is defined in a broader sense in interpreting studies compared to the use of it in a study conducted in the field of artificial intelligence. This variety requires further clarification about the specific use of linguistic and extralinguistic knowledge in the present study. To this end, the definition of linguistic knowledge and extralinguistic knowledge, as well as their synonyms and other interchangeably used terms and concepts, are summarized in the following parts of this section.

2.3.1. Linguistic Knowledge

In the broadest terms, linguistic refers to "belonging or relating to language or linguistics" in dictionary meaning. The dictionary definition obviously includes anything and everything we know and utter in any given language. To specify, grammatical and syntactical rules that we apply as well as the vocabulary that we employ during language use take place in linguistic knowledge. Dudschig et al. (2016, p.45) define linguistic knowledge as "the knowledge about word meanings and syntactic structures" (p.45). Gile (1995) includes "knowing more words, more idioms, more grammatical, stylistic and pragmatic rules" into the scope of linguistic

knowledge (p.86). In this study, linguistic knowledge refers to the definition of Gile as " knowledge of the source and target languages" (p. 110).

As mentioned in the earlier chapter, comprehension is the initial stage of interpreting. At this very first phase, Chernov (2004) suggests linguistic knowledge is required to reveal the contextual meaning, yet extralinguistic knowledge is required to move this contextual meaning to *sense* (p. 41). Lederer (2003) suggests that both linguistic and encyclopedic knowledge are activated at the same time for the comprehension of a text/speech (p.23). The contribution of linguistic knowledge to the comprehension stage is considered significant particularly in literary and political texts/speeches by Gile (1995) who suggests that comprehension improves during interpreting as the linguistic knowledge increases (p.86). He also suggests that there is more need for the knowledge of specific terms in more technical and scientific texts/speeches (p. 86). According to Gile (1995) "unexpected is always to be expected" as a result of time-constraint and natural communication atmosphere in an interpreting environment where speeches are not read from texts. Based on his Effort Model, he suggests leaving more cognitive capacity to upcoming processes rather than comprehension. Therefore, linguistic elements (vocabulary, grammar rules, style) must be mastered by interpreters to ease the comprehension process. The linguistic knowledge helps interpreters not only to comprehend the true meaning of the sender but also to comprehend what can be wrong in speaker's speech. As an example, to know that the *p* sound is often spelled as *b* in Arabic would help interpreter avoid possible misunderstanding.

To sum up, it can be inferred that linguistic knowledge is essential to grasp the contextual meaning before reaching the sense of the message and it is naturally needed to transmit the sense into target audience by using the linguistic knowledge of TL.

2.3.2. Extralinguistic Knowledge

The dictionary meaning of extralinguistic knowledge is "not involving or beyond the bounds of language" as the name suggests. This definition, as well as the concept

itself, leads to a variety of definitions and categorizations of this type of knowledge in the field of interpreting. To name a few, world knowledge (Gile, 1995; Shaffner, 1993) non-linguistic knowledge (Setton,1999) encyclopedic knowledge (Shaffner, 1993; Setton,1999) are used interchangeable with extralinguistic knowledge.

Extralinguistic knowledge is classified under a type of contextual knowledge by Dascal (2003) along with meta-linguistic knowledge. Accordingly, he defines extralinguistic context as follows;

> Extra-linguistic context includes information about the "universe of references", to which the utterance refers, the background of shared knowledge and beliefs of speaker and audience, the specific circumstances of the situation of utterance, the particular habits and idiosyncrasies of speaker and audience etc. (p.19).

Dascal (2003) further suggests three separate sources for extralinguistic context needed for the comprehension of a speaker's meaning. The first source, *extra-linguistic specific context* refers to "specific features of the situation referred to in the text" (p.174). In this case, which is mostly based on situational knowledge, contextual clues applied for the interpretation of the meaning, the addressee's previous experience with certain situational features are important. Another source of extralinguistic contextual clues is named *extra-linguistic 'shallow' context* which is defined as "general assumption about the features of a given set of situations" (p.175). In contrast with specific context which refers to a previous acquaintance with some specific features of certain situations, shallow context refers to more stereotypical assumption. The last source is named *extra-linguistic background knowledge* defined as "general knowledge about the world" (p.176). As can be seen, Dascal's definition of world knowledge is one of the three classifications of extralinguistic context sources although the term world knowledge is used interchangeable with extralinguistic knowledge in some other resources.

Unlike Dascal (2003) who classified world knowledge as a sub-category of ELK, Gile (1995) posits that world knowledge is the synonym of ELK which he defines as

"knowledge of the world" (p.110). He further divides this knowledge into two categories;

1) pre-existing extralinguistic knowledge

2) contextual knowledge derived from the ongoing speech and the environment (p.88).

The knowledge of the meaning behind '*reduction of assets'* and the knowledge what the term *'significantly significant'* refers to in statistics are few examples of Gile (1995) to extralinguistic knowledge. These definitions and the examples given by Gile show that defining extralinguistic knowledge with solely general knowledge would be limiting such a broad concept. General knowledge is just a part of ELK and it is usually used to refer "knowledge of certain subjects (historically significant events, current affairs of a country etc.) rather than detailed knowledge of a particular subject" (see: McMillan Dictionary). ELK encompasses general knowledge, yet it is not limited to knowledge of certain topics.

The broadest definition of world knowledge can be seen in Lederer's (2003) Interpretive Theory, as she classifies both linguistic and extra-linguistic knowledge under the title of world knowledge, as she calls *cognitive inputs* (p.29).

Lederer (2003) suggests that sense can be grasped only in virtual terms and solely through linguistic knowledge, thus the association of extra-linguistic knowledge is also required for both understanding and re-expression processes (p.14). Lederer, as cited by Van Basien (1999), also defines linguistic and extralinguistic knowledge set ways to anticipation during SI. According to Lederer:

> In the latter case [extralinguistic knowledge] the interpreter uses his/her situational and general knowledge. In the case of linguistic anticipation, the interpreter predicts the appearance of a constituent on the basis of the syntactic and/or semantic information provided by the source language sentence.

In parallel with the approach of Gile, Lederer also defines contextual knowledge as what is learned during the translation process. However, Gile (1995) assumes that this acquisition takes place mostly before the interpreting environment (e.g.

conference, meeting) (p.131). Accordingly, there are three ways to acquire information in terms of interpreting; advance preparation, last-minute preparation and/or in-conference acquisition which involves the knowledge to be acquired from the documents submitted after the conference started and from the ongoing presentations and speeches as well as booth-partner sharing (p. 145-146).

Lederer (2003) suggests that contextual knowledge takes place in short term memory unlike extra-linguistic knowledge which needs internal or external stimuli in long-term memory to be activated (p.30). Considering the fact that not every speech/text carries explicit messages, extra-linguistic knowledge is also needed to grasp the implicit meaning and connotations. Lederer (2003) exemplifies extra-linguistic knowledge as the *knowledge of energy problems* needed to comprehend the intended meaning *(voluoir dire)* in a passage (p.33).

What Lederer calls *Cognitive Inputs/World Knowledge* is renamed by Gile as *Knowledge Base* including both linguistic and extralinguistic knowledge (p.110). In parallel with Lederer's perception of contextual knowledge, Gile (1993) also assumes that knowledge acquisition is possible during interpreting/listening process. On the other hand, to leave more space in cognitive capacity of the interpreter, the extent of pre-existing knowledge in the *Knowledge Base* contributes to knowledge acquisition in the interpreting environment. In other words, it is always possible to add new information to one's *Knowledge Base* while listening/interpreting a speech; yet the requirement for this acquisition must be limited to prevent consuming much of the cognitive energy. To ensure this, an interpreter is expected to have broad extra-linguistic knowledge (e.g. current affairs, subject of the speech, speaker's background, interpreting environment) as well as a good command of both source and target language. Otherwise, more time and energy would be needed for the acquisition of new information to fill the knowledge gap between the interpreter and speaker. In addition, as Gile (1995) suggests, weak extralinguistic knowledge may lead to incorrect translation despite strong command of the source language (p.119).

In parallel with the definitions of Lederer (2003) and Gile (1995), Chernov (2004) defines extralinguistic knowledge as all other sources of information, which is not related to the knowledge of language and suggests that cognitive, pragmatic and situational knowledge can be classified under the title of extralinguistic knowledge (p. 72).

Chernov (2004) also suggests that extra-linguistic sources, the absence of which would cause incomplete comprehension, are powerful tools for inferences during simultaneous interpreting (p.72). These inferences are not necessarily the exact prediction of the upcoming statements. An interpreter can anticipate the next ideas and messages to be uttered by the speaker based on his/her linguistic and extra-linguistic knowledge. Unlike linguistic anticipation, which is based on the prediction of the use of noun/verb/adjective following a certain linguistic unit, extra-linguistic anticipation is composed of more complex elements. In the former type, knowledge of grammar rules, collocations and standard phrases improves the probability of correct anticipation (p. 173). However, the extra-linguistic knowledge requires the knowledge of conference environment, speaker's position and the subject of the speech (Gile, 1995, p.174).

As suggested by the scholars exemplified above, the definition of extralinguistic knowledge differs from each other depending on the perspectives of the authors. When these definitions and examples are considered all together, it can be suggested that extralinguistic knowledge includes situational knowledge, contextual knowledge, general knowledge about the world, subject knowledge, cognitive knowledge, pragmatic knowledge, knowledge of environment where the interpreting is performed, speaker's position and background.

As the main focus of this study is to investigate the effects of complementarity between LK and ELK on SI quality, the concept ELK is limited with *subject knowledge* and *contextual knowledge* in this study. Since subject knowledge and contextual knowledge have more concise and solid effect that can be measured unlike more general definition such as *general knowledge about the world;* and more complementing than specific knowledge of speaker's position. In SI, "knowledge of academic background of the speakers and addressees may do

away completely with the problem of the titles" (Gile,1993), however more knowledge of the speech subject is needed to to reach full comprehension of the speech, in other words, to grasp the sense to be able to reformulate it into TL (p.96).

The equal importance of linguistic and extra-linguistic knowledge in conference interpreting leads to discussions in the field of teaching interpreting. According to Gile (1995), there are two different opinions about whether linguistic or extralinguistic knowledge should be prioritized during the preparation for a conference (p.146). In his opinion, it is possible to interpret specialized texts and speeches with a limited background knowledge and there are some studies reporting no significant effect of pre-existing extralinguistic knowledge on interpreting performance (see Anderson, 1979; Alonso Bacigalupe, 1999). Therefore, he suggests giving priority to linguistic knowledge for the preparation of a conference interpreting.

2.3.3. Complementarity

Communication starts with an understanding of the given message, and this understanding is based on the integration of two main types of knowledge, namely linguistic and extralinguistic knowledge. Komissarov reports that "understanding can be achieved only if the information contained in language units is supplemented by background knowledge of facts referred in the message (1991, p.43). In other words, comprehension cannot be possible without knowledge of words or subject. As Dancette (1997) suggests "comprehension does not operate only at semantic level" (p.78), but informational input acquired from the text, world and pragmatic situation is activated at a conceptual level as well.

Similarly, Gile (1993) illustrates two main components of comprehension in an equation as; LK + ELK = Comprehension. In this equation, Gile mentions the presence of complementarity between two types of knowledge. Accordingly, he posits that "the better of extralinguistic knowledge, the less knowledge of the language is required to reach the same level of comprehension" (p.96). In other

words, the high extralinguistic knowledge can compensate the lack of linguistic knowledge to some extent and can ensure a relatively high level of comprehension depending on the text/speech (Gile, 1995). He further suggests that this complementarity is of great importance for quality in any translation process since the translator is expected to have limited extralinguistic knowledge compared to the principals of the related subject area (p.83). As suggested, Gile (1995) puts a special emphasis on the lack of extralinguistic knowledge rather than linguistic knowledge within the scope of complementarity. It can be explained by the fact that various sources (dictionaries, glossaries, the Internet) can be used to quickly cope with unknown linguistic units during the translation process. Considering the time limitation in SI and the limited ability of simultaneous interpreter to use the same sources in order to cope with the deficiencies in both linguistic and extralinguistic knowledge makes the topic of complementarity important for simultaneous interpreting.

The absolute distinction of linguistic and extralinguistic knowledge is blurred in cognitive terms since no type of knowledge can be acquired in isolation of each other and these two types of knowledge can be integrated subconsciously. On the other hand, in such a complex cognitive process as SI, awareness of the integration of linguistic and extralinguistic knowledge is needed as put forth by Gile (1995):

> Spontaneous, subconscious use of linguistic knowledge and extralinguistic knowledge may not be enough to ensure comprehension since either because the Receiver's combined level of both is not high enough or because the text or speech itself has a complex content or deviates from generally accepted linguistic or cultural standards (p.83).

The awareness of this integration is defined "*deliberate analysis*" by Gile (1995) and added into the equation of comprehension where the subconscious use of LK and ELK is not enough. For a comprehensive understanding of the message, pursuing the following stages of SI successfully and to cope with the deficiencies in knowledge, it is believed that interpreters need to be informed and trained about

the complementarity between linguistic and extralinguistic knowledge so that they can apply deliberate analysis in the comprehension stage of SI.

2.4. QUALITY AND PERFORMANCE ASSESSMENT IN SI

Demands and needs of the speaker, audience, and interpreter may differ by particular mode and setting of interpreting as elaborated in *Section 2.1.2.* Variations in the interpreting objective and environment bring along various criteria to test good interpreting. For instance, the expectation of a company owner listening to the interpreting in a trade deal conference may differ from the evaluation criteria of a professor after an examination.

The efforts to draw a framework for quality assessment in interpreting has been initiated only after the 1980s. The pioneering survey study of Hildegund Bühler was the first empirical study on setting up criteria to this end in 1986. In this study, she asked AIIC (the International Association of Conference Interpreters) members to define which criteria are taken into consideration by the Association while selecting candidates for the membership of AIIC. The consistency of sense with the original was the highest ranking criterion specified by the participants of her survey. Other criteria deemed important by the participants were logical cohesion, completeness, correct terminology, correct grammar, correct terminology, and fluency of delivery. On the other hand, pleasant voice, appropriate style and native accent had a relatively lower rating among important criteria (Bühler, 1986). These criteria were listed in her study based on professional interpreters rather than the opinions of listeners. However, a study conducted by (Kurz 1989) elicited that the criteria listed in Bühler's survey (1986) by professional interpreters also reflect the expectations of listeners in a medical conference. The criteria, which were deemed important but rated low by the interpreters such as pleasant voice, native accent, and grammar, were rated even lower by the users of interpreting service in Kurz's study (1989).

Another survey study conducted by Kopczynski (1994) brought the expectations and quality criteria of the speakers and listeners together. Contrary to the previous

studies, participants were asked to specify the irritant factors in SI. Accordingly, the wrong terminology was found the most irritant by both speakers and listeners. However, responses of two groups of the participants to the second and third most irritant factors differed. Speakers found the exact rendition of the source message more irritant while unfinished sentences and grammaticality were more irritant for listeners (Kopczynski, 1994). As suggested by the results of this study, expectations from the interpreting performance can differ by different groups, which is also confirmed by the results of the survey study conducted by Moser as cited by Kurz (2001). It was found that the criteria specified by the user participants differed by experience, age and even gender of the users.

Schjoldager (1995) offers a chart including significant criteria for quality interpreting (p. 191). The chart is divided into four macro criteria (delivery and comprehensibility of interpreting, language, coherence and plausibility, loyalty) each of which involves micro criteria as well. Four macro criteria presented in the chart are product-oriented and any failure in one of these categories makes interpreting invalid (Doğan, 2009, p. 90). Schjoldager's chart (1995) offers organized means to assess interpreting performance although no guideline is supplied for scoring the performance.

The lack of a uniform scale of quality interpreting results from varying intentions of assessment-makers such as the differentiation in the perception of good interpreting product of a researcher, teacher and listener in a conference as reported by Kutz as cited by Kalina (2005, p.776).

As can be inferred from the results of these studies, variations in user's criteria bring along variations in quality assessment scales as well. Pöchhacker (2001) defines these variations as follows; "studying quality essentially means doing so from different angles and perspectives, taking into account both the product and the service aspects of the activity of interpreting" (pp.423-4214).

For an observational or experimental study which is based on measuring participants' performances, a scoring rubric must be included to ensure the consistency in scoring multiple interpreting performances. To this end, a score-

based quality assessment scale, which was tested for reliability and validity, was needed for the present study. Hence, Lee's (2008) rating scale for interpreting performance assessment was preferred in this thesis. This scale of Lee (2008) has three major categories for the assessment; accuracy, target language quality and delivery (p.169). Definitions of these three criteria are based on Pöchhaker's model (2001). Accordingly, the accuracy criterion refers to accurate rendition rather than the same utterance of the source message. The target language quality defines "correctness, naturalness, and contextual appropriateness of language" and delivery refers to "good public speaking and presentation skills or, more broadly speaking, effective communication skills" (Lee, 2008, p. 169). Quality band range differs from 0 (unfinished) to 6 (successfully completed) for accuracy and target language quality; from 0 (unfinished) to 3 (excellent) for delivery. This scoring method for three different criteria in SI quality was adopted to score pre-, follow-up and post-test SI performances of the participants in the present study.

Theoretical information, as well as the definitions of some significant concepts for the study, are presented in this chapter. The next chapter dwells on the methodology applied in this thesis to find the effect of linguistic and extralinguistic knowledge on SI with a specific focus on complementarity between them.

CHAPTER 3

METHODOLOGY

This chapter focuses on the methodology used in this research to reveal and investigate the complementarity between linguistic and extralinguistic knowledge through the interpreting performances of the participants. The chapter dwells on the components of the methodology such as the participants, test design, data collection tools, test procedure, data analysis techniques and presentation of the obtained data.

3.1. PARTICIPANTS

(1) **The participants of the pilot test** are 10 fourth grade students; being 5 participants from Department of Translation and Interpretation at Atılım University and 5 participants from Department of Translation and Interpretation at Çankaya University in the fall semester of the 2016-2017 academic year. All participants had successfully completed the Simultaneous Interpreting-I course and were taking the Simultaneous Interpreting-II at the time of the test. 5 participants from Atılım University were found successful at the Aptitude Test for Simultaneous Interpreting. Participants from Çankaya University were the most successful students in simultaneous interpreting course by the assessment of the instructor of the course who is also a professional simultaneous interpreter. The pilot test was conducted at the Simultaneous Interpreting Laboratories of both Atılım University and Çankaya University.

(2) **The participants of the main test research** are 5 postgraduate and 11 fourth grade students in the English Division of the Department of Translation and Interpretation at Hacettepe University in the spring semester of the 2016-2017 academic year. They took part in the research voluntarily. The undergraduate students were the ones who were found successful in the Aptitude Test for Interpreting held at the beginning of the Spring semester in 2015-2016 academic year. All of the participants had successfully completed the consecutive interpreting

course which was advised to be taken prior to the simultaneous interpreting course. All of the participants were taking the simultaneous interpreting course at the time of the test. The levels of the participants were found to be equal in the simultaneous interpreting test administered by their professor at the beginning of the semester. The whole test procedure of the main test was held at the Simultaneous Interpreting Laboratory at Hacettepe University.

3.2. DESIGN OF THE STUDY

One group pretest-posttest experimental design was preferred in this study. In this test design, the dependent variable of the research is simultaneous interpreting performance while the independent variables are (1) linguistic knowledge and (2) extralinguistic knowledge of the participants. In addition to the comparison of pre-test and post-test performances of participants; the difference of performances in each subject area was also analyzed.

Table 1: *Test Design of The Study*

Group	**PRE-TEST**	**EXPERIMENT**	**FOLLOW-UP TEST**	**POST-TEST**
G1	T (W) T(S)	Training on the complementarity between LK and ELK	T (W2) T (S2)	T (W3) T (S3)

T(W) refers to texts involving *words* unknown to the participants

T(S) refers to the texts involving *subjects* unknown to the participants

3.2.1. Validity and Reliability

(1) Expert opinion was asked to test the content validity of the experiment texts to be used to evaluate the participants' performances. The experts were two professional interpreters who were also academicians.

(2) Reliability of the experiment texts was performed on SPSS 23.0 via Cronbach's Alpha which is a reliability analysis. Accordingly, the reliability of the experiment texts was verified and found statistically *excellent* (0.92 for T(tW); 0.95 for T(tS); 0.96 for T(mW); 0.92 for T(mS); 0.96 for T(pW) and 0.94 for T(pS)).

3.2.2. Pilot Study

A pilot test was applied prior to the main test with the purpose of evaluating the effect of the variables in question on interpreting performance in advance. The same tests had been conducted before carrying out the main test to administer the effectiveness of the study and to set an example for possible shortcomings of the main study. Within the light of participants' feedbacks and performance evaluation, speeches were shortened and recorded in a slower pace for the main test.

3.2.3. Training

One week after the pre-test, training activities started for all participants. Training was applied once a week and lasted for three weeks. At the beginning of the training course, the participants were informed about the three main stages of SI (comprehension, deverbalization and reformulation) within the scope of the Effort Model, Massaro's Model and the importance of both linguistic and extralinguistic knowledge in SI as well as the complementarity between them. In this course, the participants reported feeling more anxious while interpreting an unfamiliar topic compared to a speech including words unknown to the participants.

In the second week, the participants interpreted three texts having many unknown linguistic units in familiar topics and other three texts in unfamiliar topics with no unknown linguistic units. Practices were based on the teaching model suggested by Gile (1995, pp.90-95) to raise awareness on challenging parts of the speeches and how these challenges can be overcome through complementarity between LK and ELK. At the end of each simultaneous interpreting performance, feedback was provided on the participants' performances through examples on complementarity between LK and ELK. Possible strategies that could have been applied to cope with the problems related to the lack of LK and ELK were discussed to this end. At the end of the course, the participants were asked to rate the difficulty level of each speech. Contrary to their negative attitude to speeches delivered on an unfamiliar topic in the first course, participants gave almost the same scores to specify the difficulty level of all texts at the end of the second course. Furthermore, most participants reported feeling more comfortable dealing with the challenges of

unknown linguistic units and unfamiliar topics following the presentation and examples on the complementarity between LK and ELK.

In the third week of the training, SI performances of the participants were recorded and scored as a follow-up test.

At the end of the treatment, pre-test material was applied as post-test. The change between two performances is presented in Tables.

3.2.4. Assessment of SI Performances

Quality in SI depends on a good number of factors varying from accurate rendering of the message to pleasant voice of the interpreter. In line with the variety of demands of the scholars, audience, employers, and interpreters, various studies have been conducted and rating scales have been developed to assess SI performances depending on some pre-determined criteria. In this study, a single rating scale developed by Lee (2008) was preferred to objectively assess SI performances of the participants as well as to statistically score and analyze the performances. This scale of Lee (2008) is based on scoring the performances through three criteria that are *accuracy, target language quality* and *delivery* (p.169). The scores that can be obtained from the scale range from 0 to 6 in first two criteria and 0 to 3 in the criterion of delivery. In this research, every sentence of the interpreting speeches, divided into 30 sentences, was scored based on these three criteria and the summation of the scores from each criterion constituted the total SI performance score of the participants (see Chapter 2.4.)

3.3. DATA COLLECTION INSTRUMENTS

Instruments used for the data collection in this research can be divided into three categories that are 1) Preliminary Tests, 2) Texts to be Interpreted, 3) Comments of the Participants.

3.3.1 Preliminary Tests

Preliminary tests include two different tests, namely Vocabulary Test and Extralinguistic knowledge test which aimed to detect the knowledge of the participants on selected words and topics involved in the speeches to be interpreted.

3.3.1.1. Vocabulary Test

The vocabulary test formed and modified in line with the purpose of this thesis is based on Productive Vocabulary Levels Test (LVT) which was originally developed by Nation, Laufer and Nation (1999) to measure the productive vocabulary knowledge size of foreign language learners. In this test, participants are expected to complete the missing word in a sentence. Since the first letters of the missing word are given, this is also known as a *cued recall test*. Unlike the receptive vocabulary size which aims to test comprehension and listening skills of foreign language learners, productive vocabulary size tests to what extent learners can speak and write (Webb, 2008, p.81). Although SI requires both receptive and productive vocabulary knowledge of the interpreters to first comprehend and then to utter the message, only productive vocabulary size was tested in this research. As the purpose of the research is to investigate whether the lack of certain vocabulary units can be compensated by the presence of ELK at the stage of reformulation, which is more related to speaking ability of the participants, the use of productive vocabulary level test was found more appropriate.

The original test was modified with the words to be questioned in six different speech texts in line with the purpose of the research. Furthermore, no sentence structure was given to the participants in the vocabulary test in order to avoid recalling the sentences during SI. In conclusion, the vocabulary test was based on asking the English meaning (first letters were given as cues) of the Turkish word asked.

The vocabulary test was assigned to the participants with the purpose of detecting to what extent the participants know the linguistic units in speeches prior to the interpreting task. The main purpose of the test was to see the linguistic knowledge difference between the first group and second group speech texts.

3.3.1.2. Extralinguistic Knowledge Test

The test including 12 questions was applied prior to the interpreting stage. This test aimed to detect acquaintance of the participants with certain topics (AIDS, Zika, Trans-Pacific Partnership etc.) in three different subject areas and to reveal the difference between the speeches delivered in the first session and second session.

3.3.2 Texts to be Interpreted

The interpreting task includes simultaneous interpreting of six different speeches from B language (English) to A language (Turkish). Each two of these speeches belongs to one of the three subject areas; namely Politics, Medical and Technology. In each subject area, one of the speeches includes a high number of linguistic units, which were detected as unknown to the participants by Vocabulary Test, in a familiar topic. On the other hand, the second speech does not include any unknown linguistic units while it is delivered on a topic which was detected to be unfamiliar to the participants by Extralinguistic Knowledge Test.

Table 2: *Text Types used in the Experiment*

SUBJECT AREA	TOPIC	TEXT TYPE	CONTENT
Politics	The USA's Policy towards DAESH	$T_{(pW)}$	Includes unknown linguistic units
Politics	The USA's Policy on Trans-Pacific Partnership	$T_{(pS)}$	Includes unknown extralinguistic units
Medical	AIDS	$T_{(mW)}$	Includes unknown linguistic units
Medical	Zika Disease	$T_{(mS)}$	Includes unknown extralinguistic units
Technical	Touch-screen Technologies	$T_{(tW)}$	Includes unknown linguistic units
Technical	Continuous	$T_{(tS)}$	Includes unknown

3.3.2.1. Pre-Test Texts

Six different speeches were interpreted by the participants in two sessions. In each session, participants interpreted three speeches. The speech texts interpreted in the first session include a high number of unknown linguistic units, yet these speeches are delivered on familiar topics, namely AIDS, DAESH and touch screen technology (see Appendix 1, 2, 3, respectively). On the other hand, three other speeches interpreted in the second session include highly known linguistic units, yet these speeches are on unfamiliar topics, namely Zika disease, continuous processing and Trans-Pacific Partnership (see Appendix 4, 5, 6, respectively).

Two of the speech texts in politics subject area are original speeches delivered by John Kerry while four other speeches in other fields were collected from various resources and modified to be a conference speech by the researcher.

Each text was pre-recorded by the researcher in a sound-proof environment at a normal reading speed. The average duration of each speech was 3.31 minutes in the first session and 3.40 minutes in the second session. A ten-minute break was given between two sessions.

3.3.2.2. Follow-up Test Texts

*S*ix different speech texts from the same three areas (Medical, Political, and Technical) were prepared as follow-up test in order to observe the training effect on the SI performances of the participants. In each subject area, two different speeches were delivered in one familiar and one unfamiliar topic. The topics were Diabetes, Bluetooth Technology and ISIL in the first group speeches (see Appendix 7, 8, 9, respectively); and Progeria, IRS Controversy and Landfill Gas Collection in the second group speeches (see Appendix 10, 11, 12, respectively)

3.3.2.3. Post-test Texts

The speech texts applied at the stage of the pre-test were applied once again at the end of the training. The identical use of pre-test texts in the post-test is believed to have no interfering effect on the performances of the subject since no feedback was given to the performances of the participants on pre-test texts, none of these texts were used in the training period; and the interval between applying the pre-test and post-test was long enough not to remember the particular information offered in the texts.

The post-test aims to measure whether the participants could use the complementarity between LK and ELK to overcome their lack of knowledge during SI pursuant to the three-week training.

3.3.3. Comments of the Participants

At the end of the each interpreting session, the participants were asked to comment on their performances during the interpreting task. The findings obtained from these comments were categorized to reveal strategy uses and self-consciousness of the participants towards their own performance as well as the comparison of the first and second session performances. Some remarkable findings obtained from these comments were structured as statements, presented in charts and analyzed both quantitatively and qualitatively.

3.4. PROCEDURE

The steps followed during the procedure of the study are listed as follows:

a) Theoretical background was researched and related studies in the literature were reviewed within the scope of the research topic.

b) The research group was detected as the undergraduate and graduate students who still take SI courses at the Department of Translation & Interpreting. The equal proficiency level of the research group in SI was detected by an expert opinion.

c) A total of 6 speeches were found and detected as main test tools. The subject areas of the speeches were detected as medical, technical and political to observe the differentiations between different subject groups. The selection of these three

subject areas was based on the fact that conferences that need SI most are held in these fields. In addition, this study only investigates the complementarity between LK and ELK. Therefore, subject areas that require phraseology knowledge such as law and economics were not included not to impair the results of the study. Two texts, one of which included unknown linguistic units and the other one included unfamiliar topic indicating the lack of ELK, were found for each group. Only the texts in the political subject area were authentic. The other texts were collected from various sources and modified to be suitable for SI. Some of the well-known words included in the first group texts were replaced with rarely used/known synonyms.

d) Content validity of 6 texts was tested by two experts who are professional interpreters and academicians in the field of translation and interpreting studies. Each text was divided into 30 sentences for more convenient scoring.

e) A total of 10 students enrolled in the 4th grade of Department of Translation and Interpretation in the fall semester of the 2016-2017 academic year, 5 from Atılım University and 5 from Çankaya University, participated in the pilot study. The pilot study was conducted in the SI laboratories of these two universities. Preliminary tests were administered and the participants were also asked about their opinions and comments. The procedure followed for the pilot group helped the researcher overcome pitfalls of the experiment (reading rate, time to be allocated for vocabulary test and so on.)

f) The reliability test was conducted on the experimental tests through Cronbach's Alpha in SPSS 23.0 based on the results obtained from the pilot study. The values for internal consistency of the main tests were found above statistically '*acceptable'* values. (see Chapter 3.2.1).

g) The main experiment was applied to 16 students (5 graduate and 11 undergraduate) enrolled in the English Division of the Department of Translation and Interpretation at Hacettepe University. Preliminary tests including a vocabulary and ELK test were delivered to the participants prior to the interpreting task. Participants were asked to fulfill the ELK test, which measures their familiarity with the topics to be held in speeches and to answer the questions in the vocabulary test in 20 minutes.

h) The participants were taken to the sound-proof booths and interpreted three different speeches from B language into A. This first session of interpreting lasted for 15 minutes and a 10-minutes of break was given. During the break, the participants answered informal questions asking their experiences in the first session.

i) The second session of interpreting task also included three different speeches in the same language direction and lasted for 15 minutes as well. At the end of the second session, the participants were asked about their opinions on their own performances (see Figure 8 below).

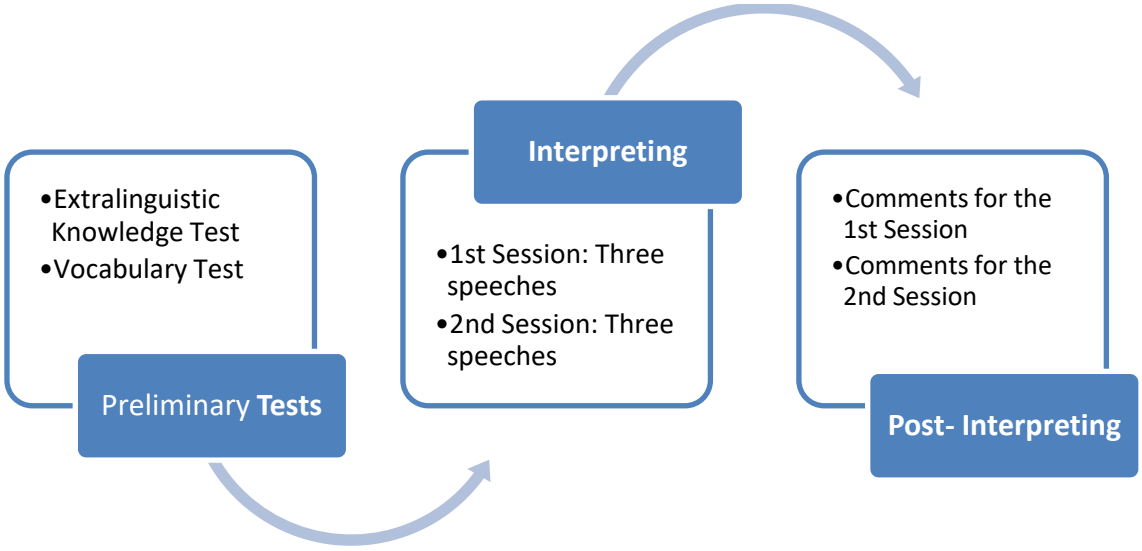


Figure 8: The Procedure of the Main Experiment.

j) The voice records of the participants were collected and scored based on the rating scale developed by Lee (2008). The obtained scores were analyzed statistically via SPSS 23.0. Preliminary tests were used to confirm the lack of knowledge of the participants on certain linguistic units and topics. The comments of the participants were analyzed as well.

k) Training course started one week later. A discussion session was held between participants about their misconception on "it is not possible to successfully interpret a speech unless you are familiar with the topic or with all linguistic units". Examples

from their performances were provided to show that they successfully coped with their lack of knowledge in one field.

l) The first course included a presentation on the importance of both linguistic and extralinguistic knowledge in SI as well as the complementarity between them.

m) In the practice part, the participants were asked to interpret a speech giving general information about Snapchat, a smartphone application, having a high number of words unknown to the participants. It was observed that none of the participants had difficulty in interpreting the speech since they were acquainted with the Snapchat program, its specifications and usage. Most participants found the exact equivalence for the words that they had never heard before. This practice aimed to raise their awareness on the fact that their ELK can compensate the lack of LK and vice versa.

n) In the next practice session, the participants were asked to interpret six different speeches in three main groups (medical, political and technical subject areas). Each group included two speeches, one having many unknown linguistic units in a familiar topic and another speech on an unfamiliar topic with no unknown linguistic units. At the end of each simultaneous interpreting performance, feedback was provided on the participants' performances and examples were given to raise their awareness toward the complementarity between linguistic and extralinguistic knowledge. In this session, all of the participants reported feeling more comfortable dealing with the challenges of unknown linguistic units and unfamiliar topics following the presentation and examples on the complementarity between LK and ELK.

o) In the second week, SI performances of the participants were recorded and scored as a follow-up test.

p) At the end of the treatment, pre-test material was applied as post-test. The difference between the two performances is presented in tables.

3.5. DATA ANALYSIS

All statistical analysis of the obtained data was conducted through SPSS (Statistical Package for Social Sciences) 23.0.

SI performances of the participants were first scored by Lee's rating scale (2008). A numerical value was given for three categories being; accuracy, TL quality and delivery. The total score of a participant for each text was detected by adding the individual scores obtained from each of three categories.

SI performance scores of the participants were tested for normality, which refers to the normal and homogeneous distribution of the data, through "***Kolmogorov-Smirnov (K-S) Test***". Since the data were found normally distributed, a parametric test, "***Paired-Sample T Test***" was applied to measure standard deviation, mean and “p” values. A t-test was administered to detect differences between both 1) first group and second group texts and 2) pre-test and post-test results.

The comments of the participants and the observations held by the researcher during the training process were also taken into consideration for the interpretation of the statistical data.

The next chapter dwells upon the results of the abovementioned tests and analyses discussed in both quantitative and qualitative terms.

CHAPTER 4

FINDINGS AND DISCUSSION

This chapter dwells on the demonstration of the obtained data through tables and charts and the discussion of the findings. To this end, the findings are analyzed under four main sections. The first section (4.1) presents the findings and discussions regarding the pilot study. The findings obtained from the experiment group are presented and discussed in the second section (4.2). The last two sections are allocated for the findings related to main research questions (4.3) and sub-questions of the research (4.4).

4.1. FINDINGS AND DISCUSSIONS REGARDING THE PILOT STUDY

The interpreter involved in SI makes use of two main types of knowledge, namely linguistic and extralinguistic knowledge. The higher level of knowledge in these two types of knowledge is known to facilitate interpreting process and to lead to a higher quality SI output. In line with the purpose of the study, to examine the effect of linguistic and extralinguistic knowledge on SI with a specific focus on complementarity between them, the experimental research design is applied in this thesis.

Prior to the main research test, t pilot study was administered on 10 fourth-grade graduate students, being 5 participants from the Department of Translation and Interpretation at Atılım University and 5 participants from the Department of Translation and Interpretation at Çankaya University, in order to detect possible problems in applying the main experiment. The whole experimental design was applied in the pilot test which included preliminary tests, main test and comments of the participants. The obtained data were statistically analyzed to see the possible outcomes of the main study. In this chapter, the data obtained from the pilot test are demonstrated under the titles of preliminary tests, main test and comments of the pilot group.

4.1.1. Preliminary Tests

The results obtained from the Vocabulary Test and Extralinguistic Knowledge Test are demonstrated in tables and charts in following sections.

4.1.1.1. Vocabulary Test

The results of the vocabulary test applied on the pilot group are presented as follows. Table 3 shows the mean percentage of the accurately known linguistic units in every subject area tested.

Table 3: *Vocabulary Test Results of the Pilot Group*

Speech Type	Mean Value (%)
T(pW)	35.52%
T(pS)	76.00%
T(mW)	16.42%
T(mS)	75.70%
T(tW)	22.20%
T(tS)	75.20%

As presented in the table, the participants correctly answered 35.52%, 16.42% and 22.2% of the linguistic units questioned in the vocabulary test regarding the first group political, medical and technical speeches, respectively. The percentages of the correctly answered linguistic units were 76%, 75.7% and 75.2% in the second group political, medical and technical speeches, respectively. Accordingly, the percentage of the accurately known linguistic units was higher in the second group speeches compared to the first group. In other words, there were higher number of unknown linguistic units in the speeches to be interpreted in the first session.

The highest percentage was found in the political speech on Trans-Pacific Partnership presented in the second session while the lowest percentage was

found in the medical speech on AIDS presented in the first session. The biggest interval between the values was found in the medical speeches while the lowest interval was in the political speeches.

As demonstrated in the table, there was a remarkable difference between the linguistic knowledge of the participants regarding the first group and second group speeches in every subject area. This finding verified that the first group texts involve much more unknown linguistic units to the participants compared to the second group texts.

4.1.1.2. Extralinguistic Knowledge Test

The results obtained from the test showed that the participants had more extralinguistic knowledge about the topics presented in the first group speeches compared to the second group speeches. The best-known topic was smartphone technologies while the least known topic was Zika disease.

Results of the given test are presented in charts as follows. The responses of the participants to the statements in the test are demonstrated individually under two parts being a) Statements regarding the topics in the first group texts and b) Statements regarding the topics in the second group texts.

a) Statements regarding the topics in the first group texts:

Statement 1: *I am informed about smartphone technologies.*

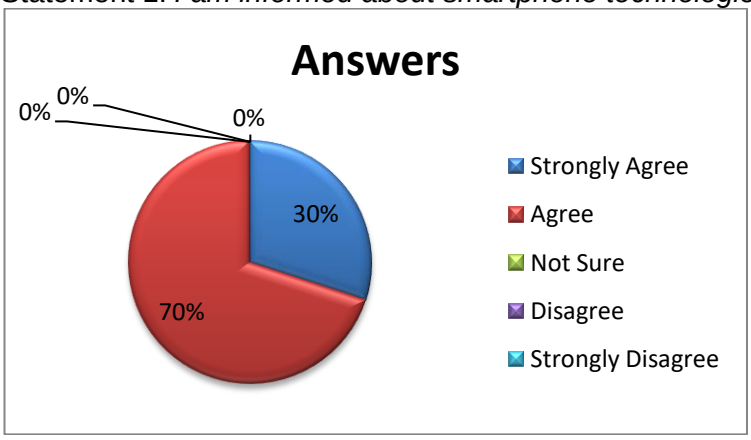


Chart 1: Responses of the Pilot Group to Statement 1 in ELK Test.

As presented in the chart, 3 participants (30%) strongly agreed and 7 participants (70%) agreed with the statement. According to these percentages, it can be stated that all of the participants reported being familiar with smartphone technologies.

Statement 2: *I can basically explain how touch screens operate.*

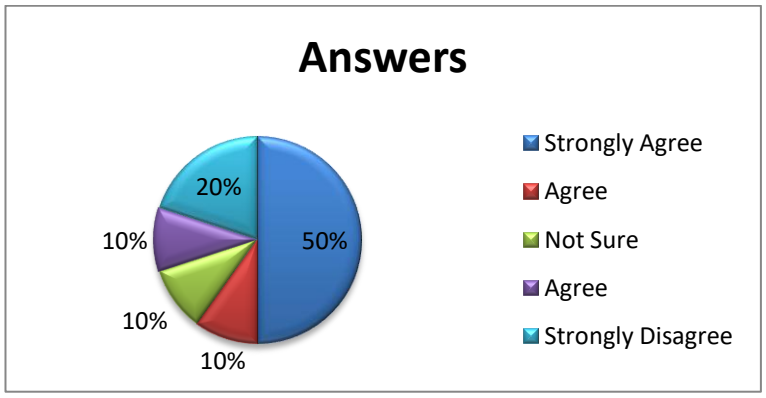


Chart 2: Responses of the Pilot Group to Statement 2 in ELK Test.

Statement 2 was a more specific expression testing the familiarity of the participants with smartphone technologies compared to the previous statement. 5 participants (50%) strongly agreed and 1 participant (10%) agreed with the statement. On the other hand, 2 participants (20%) strongly disagreed and 1 participant (10%) disagreed with the statement and 1 participant (10%) was not sure about his/her response. This finding also shows that the majority of the participants (60%) were informed about the topic in general terms.

Statement 3: *I am informed about AIDS.*

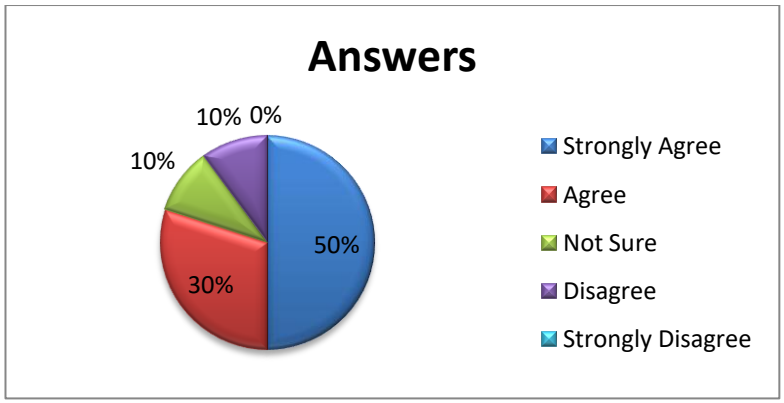


Chart 3: Responses of the Pilot Group to Statement 3 in ELK Test.

Half of the participants (50%) strongly agreed and 3 participants (30%) agreed with the statement. Only 1 participant (10%) disagreed with the statement while 1 participant (10%) was unsure about it.

Statement 4: *I have basic knowledge about human immunodeficiency system.*

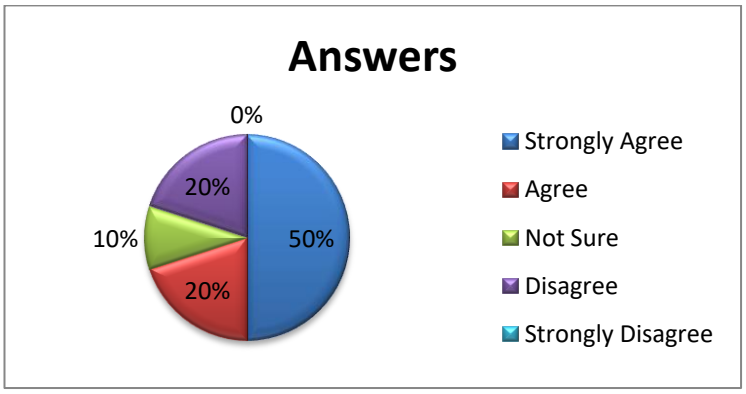


Chart 4: Responses of the Pilot Group to Statement 4 in ELK Test.

As presented in the chart, 5 of the participants (50%) strongly agreed and 2 participants (20%) agreed with the statement. One participant (10%) was not sure about the response while 2 participants (20%) disagreed with the statement.

Statement 5: *I am informed about the policy of the USA toward ISIS.*

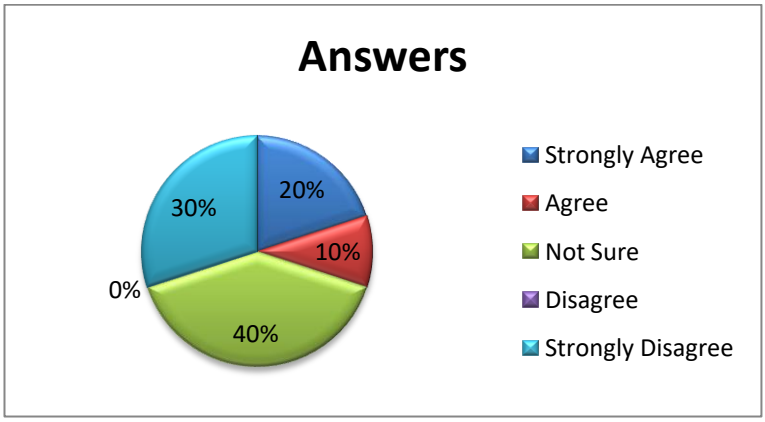


Chart 5: Responses of the Pilot Group to Statement 5 in ELK Test.

Unlike the statements above, the percentage of the participants who agreed with this particular statement was relatively low. Accordingly, 2 of the participants (20%) strongly agreed and 1 participant (10%) agreed with the statement. 4 of the participants (40%) were not sure about the response while 3 participants (30%)

strongly disagreed with the statement. This result was attributed to the fact that the students in the pilot group did not practice political speeches in their SI courses. Since it was known that the experiment group practiced political speeches more than the pilot group, the political speech on the USA's policy towards ISIS was not eliminated from the test material despite the low percentage indicating insufficient knowledge of the participants about the topic in the pilot group.

Statement 6: *I am informed about ISIS.*

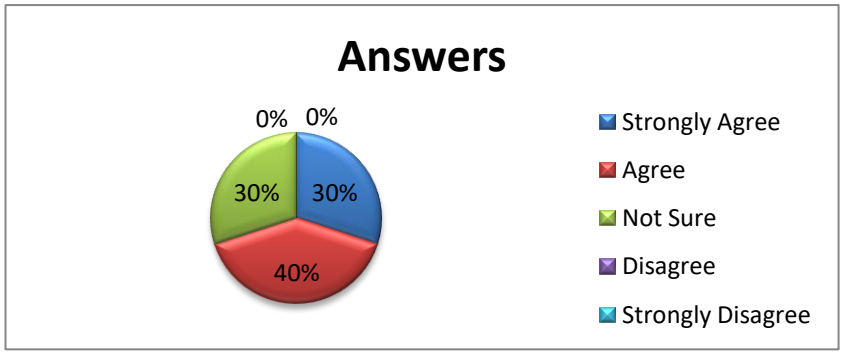


Chart 6: Responses of the Pilot Group to Statement in ELK Test.

The percentages in this chart, which demonstrates the responses given to the more general version of Statement 5, differed from Chart 5. Accordingly, 3 participants (30%) strongly agreed and 4 participants (%40) agreed with the statement while 3 participants (30%) were not sure. Although the participants were less informed about the USA's policy towards ISIS, most of them (70%) knew that ISIS is a terrorist organization committing atrocities in the Middle East.

b) Statements regarding the topics in the second group texts:

Statement 7: *I am informed about manufacturing technologies.*

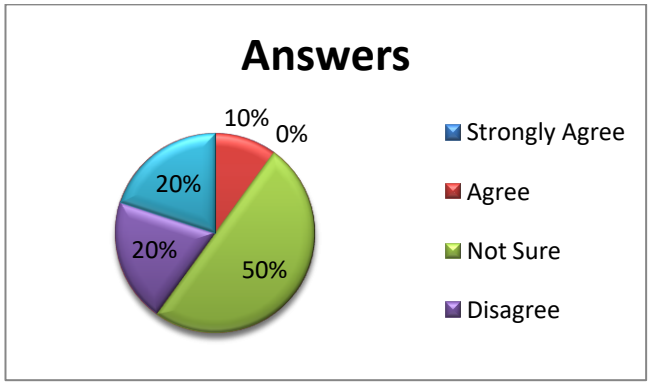


Chart 7: Responses of the Pilot Group to Statement 7 in ELK Test.

As expected, the percentage of the participants who agreed with the statement was much lower compared to the responses given to the statements regarding the first group speeches. Only 1 participant (10%) agreed with the statement and half of the participants (50%) were unsure about their responses. 2 participants (20%) strongly disagreed and 2 participants (20%) disagreed with the statement.

Statement 8: *I have basic knowledge about the purposes of continuous processing.*

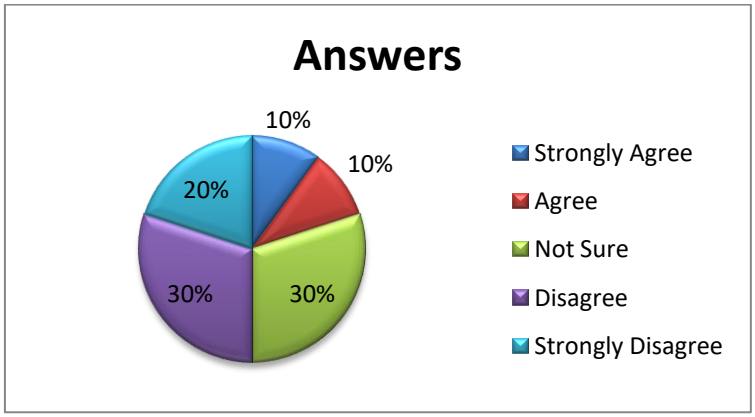


Chart 8: Responses of the Pilot Group to Statement 8 in ELK Test.

In parallel with Statement 7, only 1 participant (10%) strongly agreed and 1 participant (10%) agreed with this statement. On the other hand, 2 participants (20%) strongly disagreed and 3 participants (30%) disagreed with the statement while 3 participants (30%) were unsure.

Statement 9: *I am informed about Zika.*

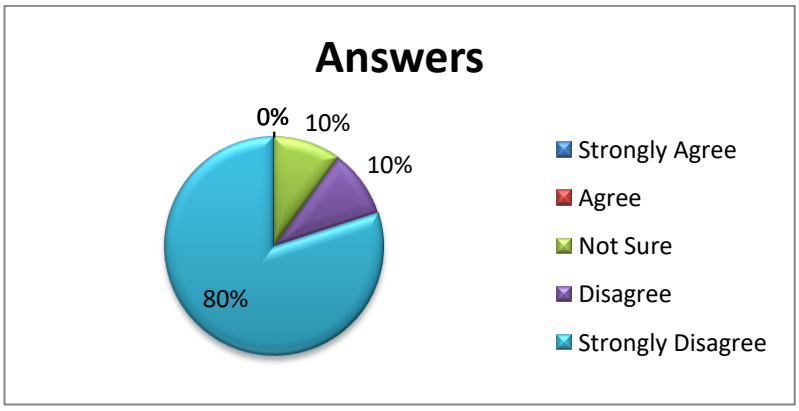


Chart 9: Responses of the Pilot Group to Statement 9 in ELK Test.

None of the participants reported knowing about Zika. Accordingly, 8 participants (80%) strongly disagreed and 1 participant (10%) disagreed with the statement while 1 participant (10%) was not sure.

Statement 10: *I can explain some outcomes of Zika.*

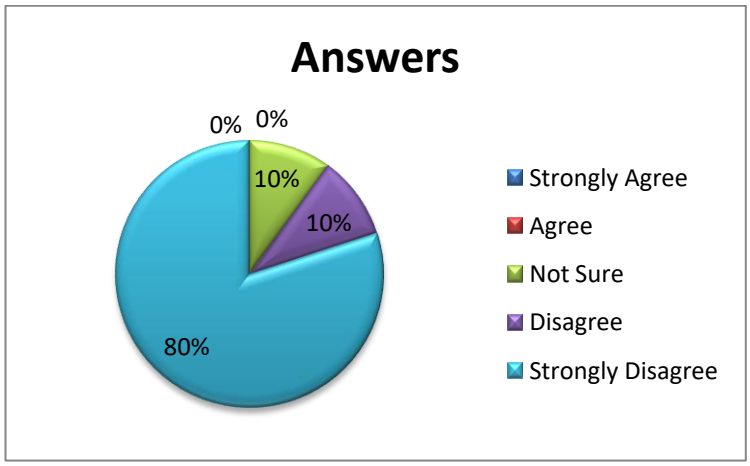


Chart 10: Responses of the Pilot Group to Statement 10 in ELK Test.

In parallel with Statement 9, this chart demonstrates the same percentages. Accordingly, 8 participants (80%) strongly disagreed and 1 participant (10%) disagreed with the statement while 1 participant (10%) was not sure.

Statement 11: *I am informed about Trans-Pacific Partnership.*

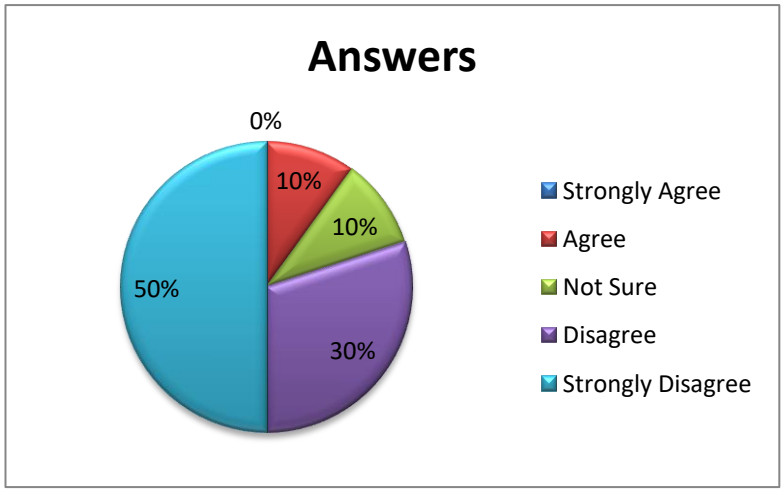


Chart 11: Responses of the Pilot Group to Statement 11 in ELK Test.

As demonstrated in the chart, most of the participants (80%) did not know about TPP. Accordingly, 5 participants (50%) strongly disagreed and 3 participants (30%)

disagreed while only 1 participant (10%) agreed with the statement. One participant (10%) was not sure about the response.

Statement 12: *I can tell some members of the Trans-Pacific Partnership.*

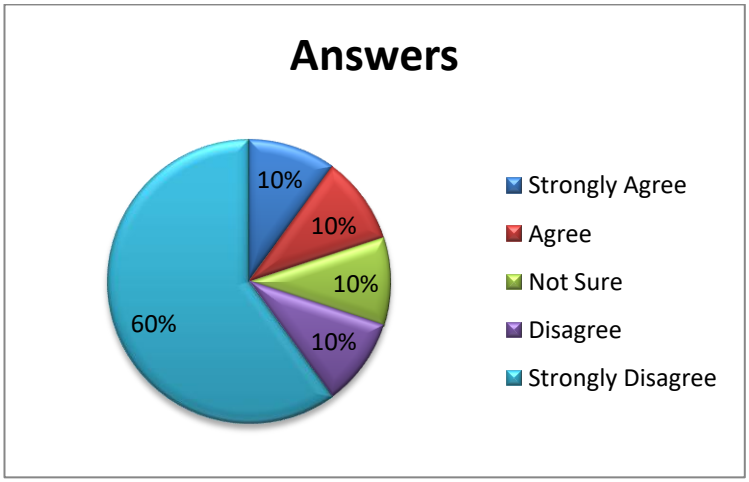


Chart 12: Responses of the Pilot Group to Statement 12 in ELK Test.

In this more specific statement related to TPP, 6 participants (60%) strongly disagreed and 1 participant (10%) disagreed with the statement. On the other hand, only 1 participant (10%) strongly agreed and 1 participant agreed (10%) with the statement. The percentage of those who were unsure about their responses (10%) was the same with Statement 11.

In summary, the pilot study results of the Extralinguistic Knowledge Test showed that the participants were much more familiar with the first group texts compared to the second group texts. The conspicuous difference between the familiarity of the participants with the relevant topics of the speeches is believed to bring a clear-cut difference to SI performances of the participants of the pilot group.

4.1.2. Main Test

The texts to be used in the actual experiment were previously tested on the pilot group. Performances of the pilot group were also assessed comparing the scores obtained from T(mW), T(tW), T(pW) speeches with T(mS), T(tS), T(pS) speeches. The statistical analysis of the results is presented below.

Table 4: *Paired Samples t-Test Results of the Pilot Group*

	Text Type	N	Mean	Std.deviation	t	p
Paired Samples T-Test (Pilot Group)	T (W)	10	736.90	240.50	10.26	.000
	T(S)	10	429.00	181.64		

T(W) refers to texts involving *words* unknown to the participants
T(S) refers to texts involving *subjects* unknown to the participants

Table 4 presents the scores of the pilot group obtained from the interpreting performances in the 1st group texts (T(W)) in which the participants had the lack of LK and 2nd group texts (T(S)) in which the participants had the lack of ELK. According to the table, the mean score of the participants is 736.90 in the first group texts and 429.00 in the second group texts. A significant difference was found between the first and second group texts in favour of the first group texts in terms of interpreting performance ($p=0.000< 0.05$). These values apparently show that the participants had better interpreting performance in the first group texts and their lack of critical vocabulary units in the text did not impair their performance to a great extent. On the other hand, the lower score in the second group texts shows that linguistic knowledge of the participants did not help them compensate their lack of ELK.

4.1.3. Comments of the Participants

The participants were asked to comment on each session of SI task with the purpose of learning more about the perception of the participants towards easiness/hardness of the speeches, their strategy use and general opinion about self-performance. The most commonly obtained comments were restructured as statements. Accordingly, all participants agreed with the statement "My comprehension of the first group speeches was better compared to the second group" and "I believe that my interpreting performance was better in the first group speeches compared to the second group" (40% agreed; 60% strongly agreed with both of the statements). The result, which is in parallel with the findings of the

actual experiment, shows that the participants were aware of their self-performances.

However, 9 participants out of 10 disagreed with the statement "It is possible to successfully interpret a speech involving a high level of unknown vocabulary" (40% strongly disagree; 40% disagree; 10% neutral). The participants were slightly more optimistic about the statement "It is possible to successfully interpret a speech given on an unfamiliar topic" (40% strongly disagree; 30% disagree; 20% neutral, 10% agree). The comments to these two statements show that the participants were unaware of the complementarity between LK and ELK. Most of them believed that the lack of either LK (80%) or ELK (70%) would lead to failure in their interpreting performance.

Another interesting finding was the comments of the participants to the statements "First group texts were easy for simultaneous interpreting" and "Second group texts were easy for simultaneous interpreting". 80% of the participants agreed with the former statement while only 10% agreed with the latter statement. It can be concluded that the participants had more challenges in interpreting the speeches in which they had the lack of ELK.

The most impaired interpreting stage(s) was reported as Comprehension by 30% of the participants for the first group speeches while this percentage was 80% for the second group speeches. This finding, in parallel with the previous finding, also suggests that the participants had more challenges in comprehending the message delivered in the second group speeches since the participants were not acquainted with the topic. The difficulty in comprehension can also be the reason for the lower scores obtained from the second group speeches.

According to the results, the strategy use of the participants did not differ much between the first and second group speeches. The most commonly used strategies were found as macroprocessing (90%), naturalization (90%), approximate meaning (80%) and omitting (70%) for the first group speeches; and approximate meaning (80%), omitting (80%) and macroprocessing (70%) for the second group speeches, respectively. The most remarkable difference between the strategy use can be

seen in the use of macroprocessing which refers to either generalization or simplification requiring to synthesize the meaning (Sunnari, 1995). To synthesize a meaning mostly relies on the comprehension of the message. Considering the comments of the participants to the statement related to impaired interpreting stage, it could be concluded that the impaired comprehension stage in the second group texts offered less opportunity to use macroprocessing for the participants.

4.2. FINDINGS AND DISCUSSIONS REGARDING THE EXPERIMENT GROUP

This section of the chapter is allocated to the demonstration and discussion of the data obtained from the experiment group. The obtained data are presented in tables regarding preliminary tests, main test and comments of the participants, respectively.

4.2.1. Preliminary Tests

The results of the Vocabulary Test and Extralinguistic Knowledge Test applied on the experiment group prior to the main test are demonstrated in tables and charts in following sections.

4.2.1.1. Vocabulary Test

The results of the vocabulary test applied on the experiment group are presented as follows. Table 5 shows the mean percentages of the accurately known linguistic units in every subject area tested.

Table 5: *Vocabulary Test Results of the Experiment Group*

Speech Type	Mean Value (%)
T(pW)	46.00%
T(pS)	69.48%

T(mW)	17.60%
T(mS)	78.40%
T(tW)	18.29%
T(tS)	56.85%

According to the table, the mean percentage of the accurately known words is 46% for the political text; 17.6% for the medical text and 18.29% for the technical text in the first group texts. For the texts in the second group, the mean values are 69.48% for the political, 78.4% for the medical and 56.85% for the technical texts. As presented by the figures, there is an apparent difference between the linguistic knowledge of the participants in favour of the second group texts.

The only relatively close percentages between the first and second group texts can be found in the political texts. Although the vocabulary test score was found higher for the second group text, the percentage of the known words in T(pW) was much higher than both T(mW) and T(tW) scores. This high score can be attributed to the fact that the participants are exposed to political discourse and vocabulary in their daily life as well as their SI courses as practice material.

The findings on the SI performances of the participants will be discussed in line with the finding that the scores of the participants indicating their LK were much lower in the first group speeches compared to the second group.

4.2.1.2. Extralinguistic Knowledge Test

The results obtained from the test are presented in charts under two parts being a) Statements regarding the topics in the first group texts and b) Statements regarding the topics in the second group texts.

a) Statements regarding the topics in the first group texts:

Statement 1: *I am informed about smartphone technologies.*

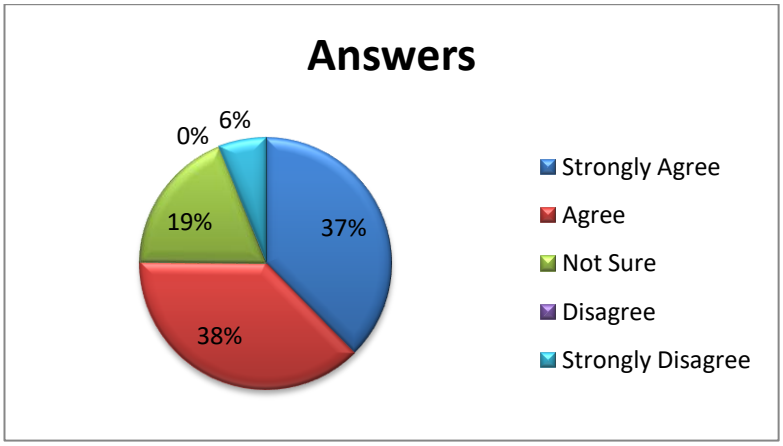


Chart 13: Responses of the Experiment Group to Statement 1 in ELK Test.

As presented in the chart, 6 of the participants (approx. 37%) strongly agreed and 6 participants (approx. 38%) agreed with the statement. 3 participants (approx. 19%) were not sure about the response while 1 participant (approx. 6%) strongly disagreed with the statement.

Statement 2: *I can basically explain how touch screens operate.*

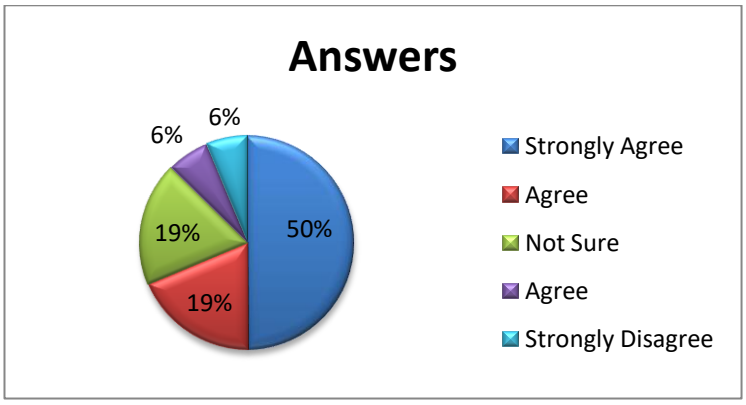


Chart 14: Responses of the Experiment Group to Statement 2 in ELK Test.

This statement is a more specific version of Statement 1 testing the knowledge of the participants regarding smartphone technologies. According to the responses, 8 participants (approx. 50%) strongly agreed and 3 participants (approx. 19%) agreed with the statement. On the other hand, 1 participant (approx. 6%) strongly disagreed and 1 participant (approx. 6%) disagreed with the statement and 3 participants (approx. 19%) were not sure about their response. This finding also

shows that the majority of the participants (approx. 69%) were informed about the topic in general terms.

Statement 3: *I am informed about AIDS.*

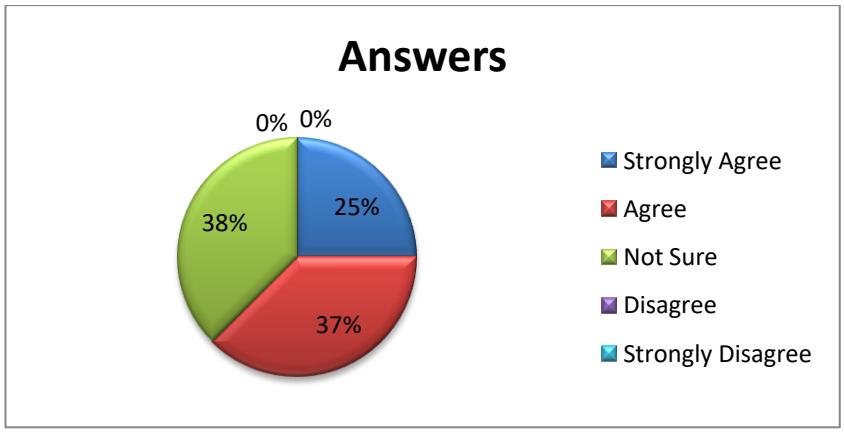


Chart 15: Responses of the Experiment Group to Statement 3 in ELK Test.

According to Chart 15, 4 participants (approx. 25%) strongly agreed and 6 participants (approx. 37%) agreed with the statement. On the other hand, 6 participants (approx. 38%) were not sure about their responses. None of the participants disagreed with the statement.

Statement 4: *I have basic knowledge about human immunodeficiency system.*

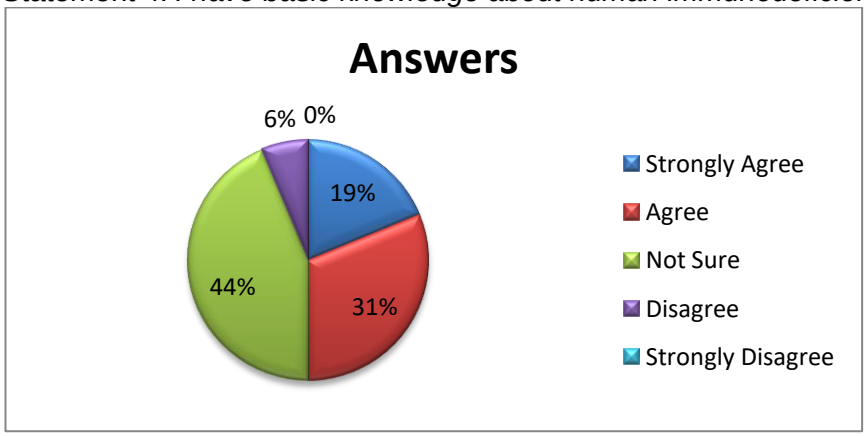


Chart 16: Responses of the Experiment Group to Statement 4 in ELK Test.

As presented in the chart, 3 participants (approx. 19%) strongly agreed and 5 participants (approx. 31%) agreed with the statement. Seven participants (approx. 44%) were not sure about their responses while 1 participant (approx. 6%) disagreed with the statement.

Statement 5: *I am informed about the policy of the USA toward ISIS.*

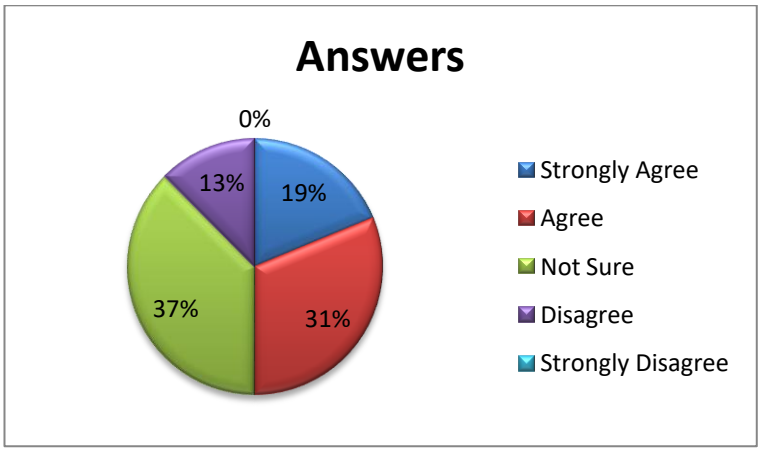


Chart 17: Responses of the Experiment Group to Statement 5 in ELK Test.

According to the chart, 3 participants (approx. 19%) strongly agreed and 5 participants (approx. 31%) agreed with the statement. Six participants (approx. 37%) were not sure about their responses while 2 participants (approx. 13%) disagreed with the statement.

Statement 6: *I am informed about ISIS.*

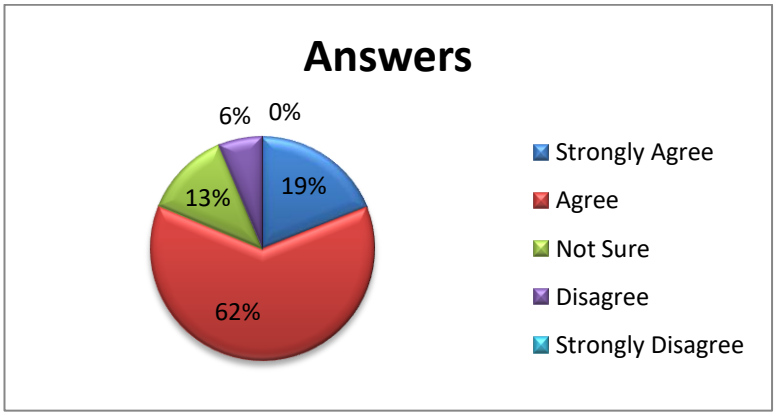


Chart 18: Responses of the Experiment Group to Statement 6 in ELK Test.

The percentages in this chart, which demonstrates responses given to the more general version of Statement 5, differed from Chart 5. Accordingly, 3 participants (approx. 19%) strongly agreed and 10 participants (approx. %62) agreed with the statement while 2 participants (approx. 13%) were not sure. Only 2 participants (approx. 6%) disagreed with the statement. Responses given to Statement 6 show that majority of the participants (approx. 81%) had knowledge about ISIS.

b) Statements regarding the topics in the second group texts

Statement 7: *I am informed about manufacturing technologies.*

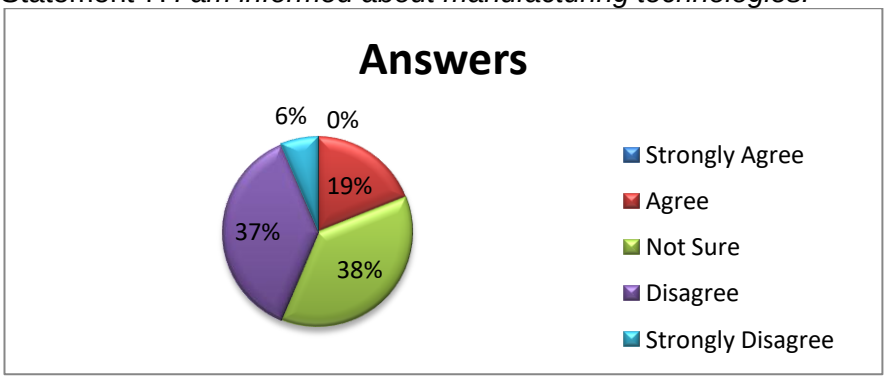


Chart 19: Responses of the Experiment Group to Statement 7 in ELK Test.

The lower percentage of the participants who agreed with the statements in the second group speeches was expected. Only 3 participants (approx. 19%) agreed with the statement and 6 participants (approx. 38%) were unsure about their responses. One participant (approx. 6%) strongly disagreed and 6 participants (approx. 37%) disagreed with the statement.

Statement 8: *I have basic knowledge about the purposes of continuous processing.*

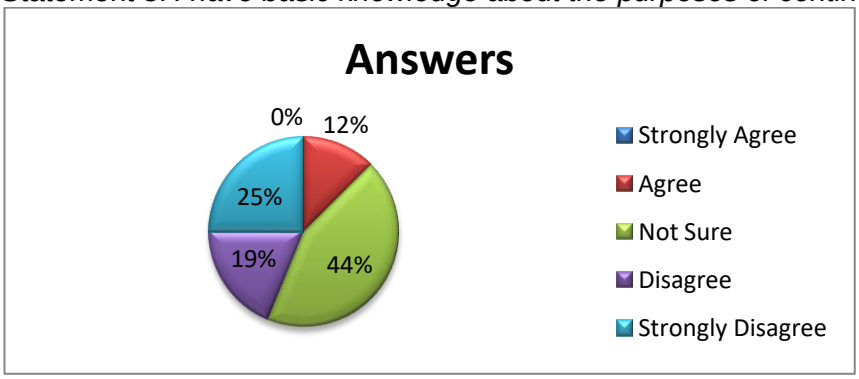


Chart 20: Responses of the Experiment Group to Statement 8 in ELK Test.

In parallel with Statement 7, only 2 participants (approx. 12%) agreed with this statement. On the other hand, 4 participants (approx. 25%) strongly disagreed and 3 participants (approx. 19%) disagreed with the statement while 7 participants (approx. 44%) were unsure.

Statement 9: *I am informed about Zika.*

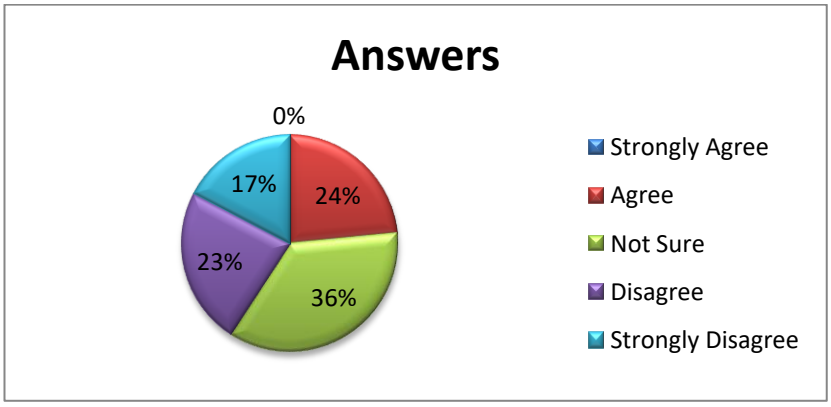


Chart 21: Responses of the Experiment Group to Statement 9 in ELK Test.

According to the chart, 3 participants (approx. 24%) agreed with the statement. 3 participants (approx. 17%) strongly disagreed and 4 participants (approx. 23%) disagreed with the statement while 6 participants (approx. 36%) were not sure.

Statement 10: *I can explain some outcomes of Zika.*

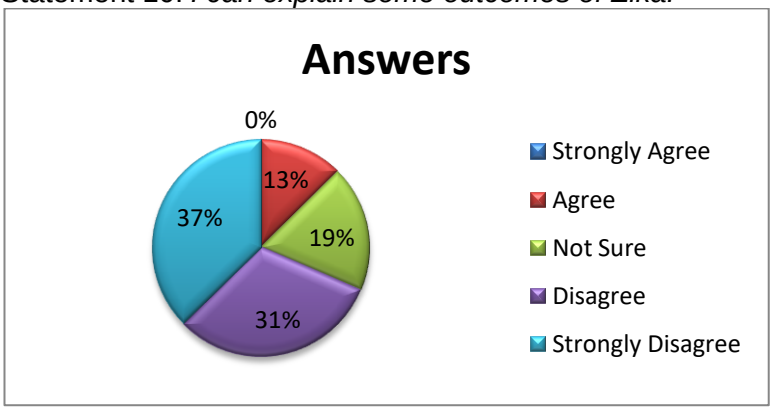


Chart 22: Responses of the Experiment Group to Statement 10 in ELK Test.

In this statement which is a more specific version of Statement 9, the percentage of those who disagreed with the statement increased. Accordingly, 6 participants (approx. 37%) strongly disagreed and 5 participants (approx. 31%) disagreed with the statement while 3 participants (approx. 19%) were not sure. Only 2 participants (approx.13%) agreed with the statement.

Statement 11: *I am informed about Trans-Pacific Partnership.*

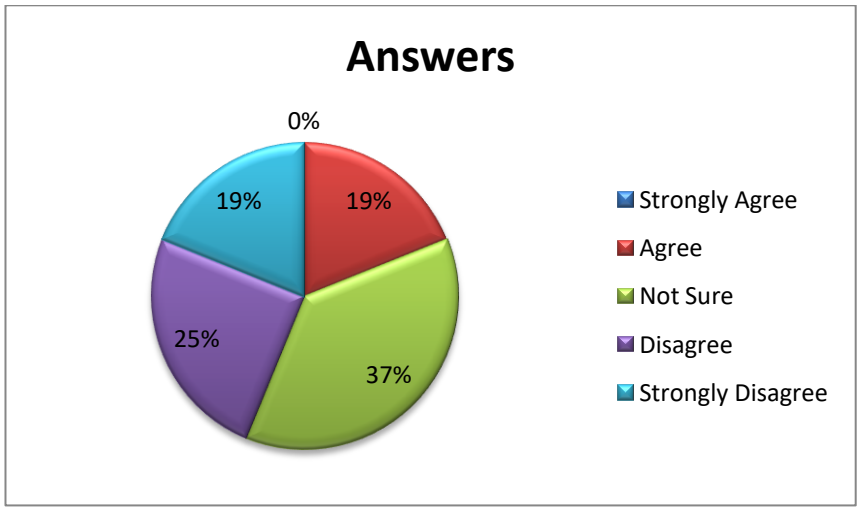


Chart 23: Responses of the Experiment Group to Statement 11 in ELK Test.

As demonstrated in the chart, none of the participants strongly agreed with the statement. Three participants (approx.19%) agreed while 3 participants (approx.19%) strongly disagreed and 4 participants (approx.25%) disagreed with the statement. Six participants (approx.37%) were not sure about their responses.

Statement 12: *I can tell some members of the Trans-Pacific Partnership.*

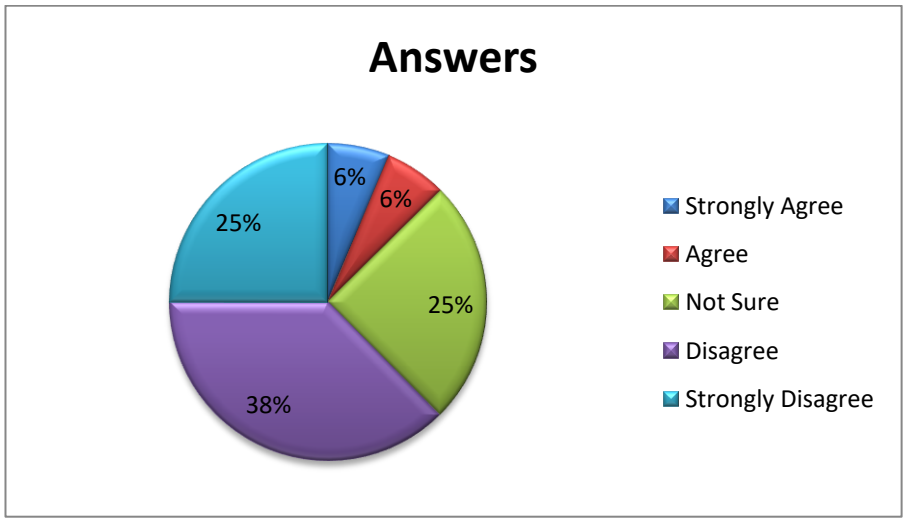


Chart 24: Responses of the Experiment Group to Statement 12 in ELK Test.

In this more specific statement related to TPP, 4 participants (approx. 25%) strongly disagreed and 6 participants (approx. 38%) disagreed with the statement. On the other hand, only 1 participant (approx. 6%) strongly agreed and 1

participant agreed (approx. 6%) with the statement. Four participants (approx. 25%) were unsure about their responses.

In conclusion, the majority of the participants agreed with all of the statements regarding the first group texts and disagreed with all of the statements regarding the second group texts. As presented in the charts above, the results of the Extralinguistic Knowledge Test show that the participants had a higher level of extralinguistic knowledge in the second group texts in every subject area.

The findings of the vocabulary test and ELK indicated that the participants had the lack of linguistic knowledge in the first group texts and extralinguistic knowledge in the second group text. Accordingly, the performances of the participants on the first and second group speeches can be assessed in terms of the effect of LK and ELK on SI quality and the complementarity between these two types of knowledge can be examined through these test materials. The following section dwells upon the findings and discussions regarding the research questions based on the performances of the participants on these texts.

4.3. FINDINGS AND DISCUSSIONS REGARDING THE RESEARCH QUESTIONS

Research questions (R.Q.) of the research are presented together with the findings and discussions in this section.

R.Q.1. Is there a significant difference between the effect of linguistic knowledge and extralinguistic knowledge on simultaneous interpreting performance?

Yes, the difference between the effect of LK and ELK on SI performance was found significant. The results of the paired samples t-test are presented in tables as follows.

Table 6: *Pre-Test Results of the Performances on the First and Second Group Speeches*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Paired Samples T-Test (Experiment Group)	T (W)	48	326.65	72.28	12.97	.000
	T(S)	48	226.54	74.12		

T(W) refers to the texts involving *words* unknown to the participants
T(S) refers to the texts involving *subjects* unknown to the participants

Table 6 presents the scores of the Experiment group obtained from T (W) and T(S) texts simultaneously interpreted within the scope of the pre-test. As already mentioned, T (W) group includes texts in which the participants had the lack of linguistic knowledge while T(S) group includes texts in which the participants had the lack of extralinguistic knowledge.

The paired samples correlation calculated for these two group texts is 0.73 and the significance value is found 0.000. The mean scores for the T(W) and T(S) texts are found 326.65 and 226.54, respectively which suggests a significant difference in favour of T(W) group texts ($p=0.000<0.05$).

The result indicates that the participants were more successful in overcoming their linguistic knowledge deficiency. In other words, they had more problems interpreting a speech given on an unfamiliar topic. Given the scores on the performance and statistical analysis on the result, the first research question can be answered as follows;

There is a significant difference between the effect of linguistic knowledge and extralinguistic knowledge on the simultaneous interpreting performance of the participants. In the present case, the lack of ELK impaired the SI performances of the participants more than the lack of LK did. Therefore, it can be concluded that the effect of extralinguistic knowledge was more important and effective on the SI performance of the participants.

R.Q.2. To what extent can the complementarity between linguistic and extralinguistic knowledge be achieved in medical, political and technical speeches?

To answer this question, statistical analyses on each of three subject areas will be presented individually. Mean scores and paired samples t-test results on the technical speeches are presented in the table below.

Table 7: *Pre-Test Results of the Performances on T(tW) and T(tS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Paired Samples T-Test (Experiment Group)	T (tW)	16	320.31	79.35	6.78	.000
	T(tS)	16	211.88	61.27		

T(tW) refers to the *technical* text involving *words* unknown to the participants.
T(tS) refers to the *technical* text involving *subject* unknown to the participants.

As presented in Table 7, the mean score obtained from the SI performances of the participants is 320.31 on T(tW) and 211.88 on T(tS). The paired samples correlation found for the performances on two different groups of texts in the technical subject area is .61 and p value is 0.000. There is a significant difference between T(tW) and T(tS) scores of the participants in favour of T(tW) ($p=0.00 < 0.05$). In other words, the participants scored higher in quality terms on the first group technical speech which included unknown linguistic units and scored less on the second group technical speech in which the participants had the lack of ELK.

Mean scores and paired samples t-test results on the medical speeches are presented in the table below.

Table 8: *Pre-Test Results of the Performances on T(mW) and T(mS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Paired Samples T-Test (Experiment Group)	T (mW) T(mS)	16 16	335.31 256.13	79.50 72.25	8.17	.000

T(mW) refers to the *medical* text involving *words* unknown to the participants.
T(mS) refers to texts the *medical* text involving *subject* unknown to the participants.

As presented in Table 8, the mean score obtained from SI performances of the participants is 335.31 on T(mW) and 256.13 on T(mS). The paired samples correlation found for the performances on two different groups of texts in the medical subject area is .87 and p value is 0.000. There is a significant difference between T(mW) and T(mS) scores of the participants in favour of T(mW) ($p=0.00 < 0.05$). In other words, the participants scored higher on the first group medical speech which included unknown linguistic units and scored less on the second group medical speech in which the participants had the lack of ELK.

Mean scores and paired samples t-test results on the political speeches are presented in the Table below.

Table 9: *Pre-Test Results of the Performances on T(pW) and T(pS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Paired Samples T-Test (Experiment Group)	T (pW) T(pS)	16 16	324.31 211.63	60.18 82.71	8.75	.000

T(pW) refers to the *political* text involving *words* unknown to the participants.
T(pS) refers to the *political* text involving *subject* unknown to the participants.

As presented in Table 9, the mean score obtained from the SI performances of the participants is 324.31 on T(pW) and 211.63 on T(pS). The paired samples correlation found for the performances on two different groups of texts in the political subject area is .78 and p value is 0.000. There is a significant difference between T(pW) and T(pS) scores of the participants in favour of T(pW) ($p=0.00 < 0.05$). In other words, the participants scored higher on the first group political speech which included unknown linguistic units and scored less on the second group political speech in which the participants had the lack of ELK.

The findings indicate that the participants scored higher in the first group speeches in every subject area. In this sense, it can be concluded that the lack of LK was successfully complemented by the ELK of the participants in all three subject areas considering the statistical analysis of the findings related to the complementarity between LK and ELK. The same finding cannot be reported vice versa, though. The low scores of the participants in the second group speeches indicate that the participants were not successful in complementing their lack of ELK with their LK.

R.Q.3. Is there a significant difference between pre-test and post-test scores of the research group that received training on the complementarity between linguistic and extralinguistic knowledge?

Yes, in all speech groups, a significant difference was found between the pre-test and the post-test scores of the participants in favour of the post-test performance. Results of the paired samples t-test related to the efficacy of the training on complementarity are presented as follows. Statistical analyses conducted on the pre-test, follow-up test and post-test results will be presented in comparison with each other in this section.

a. Follow-Up Test Results

The results of the follow-up tests on first group texts are presented below in comparison with the pre-test results in order to investigate the effect the training better.

Table 10: *Follow-up Test Results of the Performances on T(tW)*

	Text Type	N	Mean	Std.deviation	t	p
Pre-Test		12	304.50	80.31		
					.08	.939
Follow-Up Test	**T (tW)**	12	303.17	52.52		

T(tW) refers to the *technical* text involving *words* unknown to the participants.

As presented in Table 10, the mean score obtained from the SI performances of the participants is 304.50 in the pre-test and 303.17 in the follow-up test on T(tW). The paired samples correlation found for the performances in two different tests conducted on the speeches in the technical subject area is .68 and p value is 0.939. There is no significant difference between the pre-test and follow-up test scores of the participants (p=0.939>0.05).

Table 11: *Follow-up Test Results of the Performances on T(mW)*

	Text Type	N	Mean	Std.deviation	t	p
Pre-Test		12	327.83	76.63		
					.52	.611
Follow-Up Test	**T (mW)**	12	314.50	60.90		

T(mW) refers to the *medical* text involving *words* unknown to the participants.

According to Table 11, the mean score obtained from the SI performances of the participants is 327.83 in the pre-test and 314.50 in the follow-up test on T(mW). The paired samples correlation found for the performances in two different tests conducted on the speeches in the medical subject area is .19 and p value is 0.611. There is no significant difference between the pre-test and the follow-up test scores of the participants (p=0.611 > 0.05).

Table 12: *Follow-up Test Results of the Performances on T(pW)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		12	320.58	65.77	.66	.524
Follow-Up Test	**T (pW)**	12	309.83	61.43		

T(pW) refers to the *political* text involving *words* unknown to the participants.

Table 12 presents that the mean score obtained from the SI performances of the participants is 320.58 in the pre-test and 309.83 in the post-test on T(pW). The paired samples correlation found for the performances in two different tests conducted on the speech in the political subject area is .61 and p value is 0.524. There is no significant difference between the pre-test and the follow-up test scores of the participants ($p=0.524>0.05$).

As the p values suggest (.939, .611 and .524, respectively for T(tW) T(mW) and T(pW) texts), there is no significant difference between the pre-test and follow-up test scores of the participants in the first group texts ($p>0.05$).

It can be concluded that the training on the complementarity between LK and ELK did not have a positive effect on the SI performances of the participants. This result can be attributed to the fact that the participants had already been complementing their lack of LK through their ELK (see Table 6, Table 7, Table 8 and Table 9), albeit unconsciously (see Chart 31 and Chart 32). The paired samples t-test results are presented for the second group texts are as follows.

Table 13: *Follow-up Test Results of the Performances on T(tS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test	**T (tS)**	12	195.08	55.41	-5.28	.000
Follow-Up Test		12	303.83	63.18		

T(tS) refers to the *technical* text involving *subject* unknown to the participants.

In the follow-up test conducted on the technical text of the second group texts, the mean score increased to 303.83 while this value was 195.08 in the pre-test. The paired samples correlation found for the performances in two different tests conducted on the speech in the technical subject area is .28 and p value is 0.000. There is a significant difference between the pre-test and the follow-up test scores of the participants in favour of the follow-up test ($p=0.00 < 0.05$).

Table 14: *Follow-up Test Results of the Performances on T(mS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test	**T (mS)**	12	248.33	61.84	-6.44	.000
Follow-Up Test		12	338.83	46.94		

T(mS) refers to the *medical* text involving *subject* unknown to the participants.

In the follow-up test conducted on the medical text of the second group, the mean score increased to 338.83 while this value was 248.33 in the pre-test. The paired samples correlation found for the performances in two different tests conducted on

the speeches in medical subject area is .63 and p value is 0.000. There is a significant difference between the pre-test and the follow-up test scores of the participants in favour of the follow-up test (p=0.00 < 0.05),.

Table 15: *Follow-up Test Results of the Performances on T(pS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test	**T (pS)**	12	200.50	88.54	-3.55	.005
Follow-Up Test		12	296.92	62.64		

T(pS) refers to the *political* text involving *subject* unknown to the participants.

In the follow-up test conducted on the technical text of the second group, the mean score increased to 296.92 while this value was 200.50 in the pre-test. The paired samples correlation found for the performances in two different tests conducted on the speeches in the political subject area is .26 and p value is 0.005. There is a significant difference between the pre-test and the follow-up test scores of the participants in favour of the follow-up test (p=0.005 < 0.05).

It can be seen that the mean scores obtained from the SI performances of the participants increased in all three subject areas for the second group texts. These findings show that the training had a significantly positive effect on the SI performances and helped students overcome their lack of ELK through LK.

b. Post-Test Results

The results of the post-tests on the first group texts are presented below in comparison with the pre-test results.

Table 16: *Post-Test Results of the Performances on T(tW)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	320.31	79.35		
					-5.30	.000
Post-Test	**T (tW)**	16	361.13	81.05		

T(tW) refers to the *technical* text involving *words* unknown to the participants.

As presented in Table 16, the mean score obtained from the SI performances of the participants was 320.31 in the pre-test and increased to 361.13 in the post-test on T(tW). The paired samples correlation found for the performances in two different tests conducted on the speech in the technical subject area is .93 and p value is 0.000. There is a significant difference between the pre-test and the post-test scores of the participants in favour of the post-test ($p=0.00 < 0.05$).

Table 17: *Post-Test Results of the Performances on T(mW)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	335.31	79.50		
					-3.05	.008
Post-Test	**T (mW)**	16	384.25	57.51		

T(mW) refers to the *medical* text involving *words* unknown to the participants.

As presented in Table 17, the mean score obtained from the SI performances of the participants was 335.31 in the pre-test and increased to 384.25 in the post-test on T(mW). The paired samples correlation found for the performances in two

different tests conducted on the speech in the medical subject area is .60 and p value is 0.008. There is a significant difference between the pre-test and the post-test scores of the participants in favour of the post-test (p=0.008 < 0.05).

Table 18: *Post-Test Results of the Performances on T(pW)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	324.31	60.18		
					-3.07	.008
Post-Test	**T (pW)**	16	363.44	74.82		

T(pW) refers to the *political* text involving *words* unknown to the participants.

As presented in Table 18, the mean score obtained from the SI performances of the participants was 324.31 in the pre-test and increased to 363.44 in the post-test on T(pW). The paired samples correlation found for the performances in two different tests conducted on the speech in the political subject area is .74 and p value is 0.008. There is a significant difference between the pre-test and the post-test scores of the participants in favour of the post-test (p=0.008 < 0.05).

Table 19: *Post-Test Results of the Performances on T(tS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	211.88	61.27		
					-8.78	.000
Post-Test	**T (tS)**	16	344.00	64.84		

T(tS) refers to the *technical* text involving *subject* unknown to the participants.

As presented in Table 19, the mean score obtained from the SI performances of the participants was 211.88 in the pre-test and increased to 344.00 in the post-test on T(tS). The paired samples correlation found for the performances in two different tests conducted on the speech in the technical subject area is .55 and p value is 0.000. There is a significant difference between the pre-test and the post-test scores of the participants in favour of the post-test (p=0.00 < 0.05).

Table 20: *Post-Test Results of the Performances on T(mS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	256.13	72.25		
					-6.96	.008
Post-Test	**T (mS)**	16	367.81	49.13		

T(mS) refers to the *medical* text involving *subject* unknown to the participants.

As presented in Table 20, the mean score obtained from the SI performances of the participants was 256.13 in the pre-test and increased to 367.81 in the post-test on T(mS). The paired samples correlation found for the performances in two different tests conducted on the speech in the medical subject area is .49 and p value is 0.008. There is a significant difference between the pre-test and the post--test scores of the participants in favour of the post-test (p=0.008 < 0.05).

Table 21: *Post-Test Results of the Performances on T(pS)*

	Text Type	**N**	**Mean**	**Std.deviation**	**t**	**p**
Pre-Test		16	211.63	82.71		
					-13.75	.000
Post-Test	**T (pS)**	16	350.00	78.71		

T(pS) refers to the *political* text involving *subject* unknown to the participants.

As presented in Table 21, the mean score obtained from the SI performances of the participants is 211.63 in the pre-test and increased to 350.00 in the post-test on T(pS). The paired samples correlation found for the performances in two different tests conducted on the speech in the political subject area is .88 and p value is 0.000. There is a significant difference between the pre-test and the post-test scores of the participants in favour of the post-test (p=0.00 < 0.05).

To illustrate the effect of the training on the SI performances of the participants in the first group and second group texts as well as in specific to three different subject areas, following charts present the changes in the SI scores by comparing pre-test, follow-up test and post-test scores.

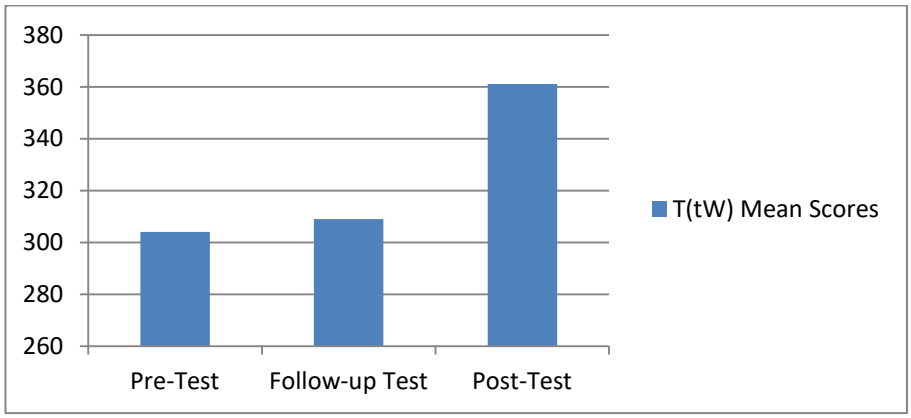


Chart 25: *Improvements of the Participants in T(tW)*

This chart presents the improvement of the participants in the first group technical text. Accordingly, the pre-test score (304) of the participants raised to (309) in the follow-up test and reached the highest point (361) in the post-test.

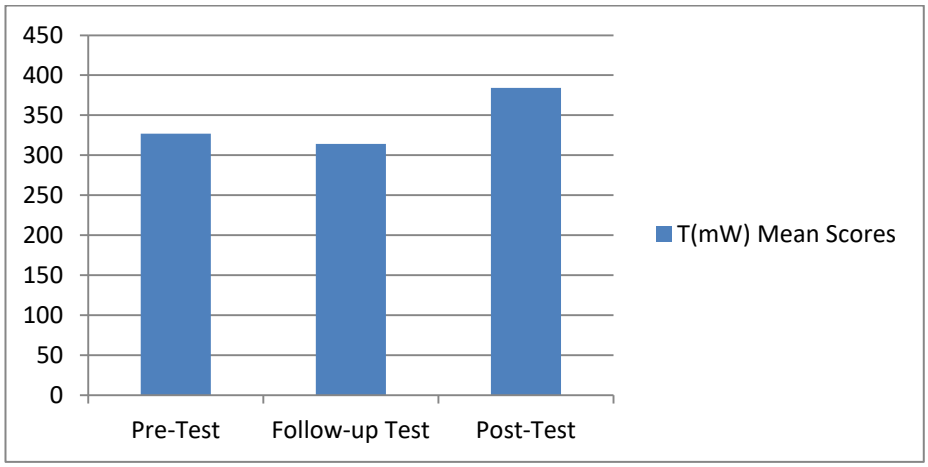


Chart 26: *Improvements of the Participants in T(mW)*

As for the improvement in the first group medical text, SI performance scores of the participants did not raise in the follow-up test (314) compared to the pre-test (327) while this score was found highest (384) in the post-test.

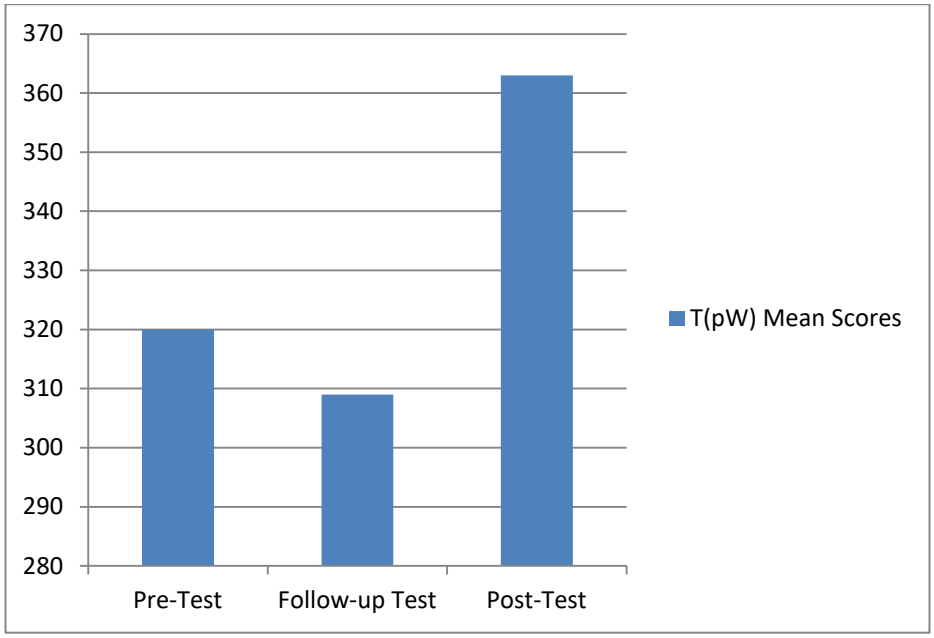


Chart 27: *Improvements of the Participants in T(pW)*

The participants scored lower in the follow-up test (309) compared to the pre-test (320) regarding their SI performance in the first group political text while the post-test score was detected at the highest level (363).

As presented in the tables above (see Tables 16, 17 and 18), post-test scores of the participants raised in all subject areas although the follow-up test score raised only in the technical text (see Chart 25). The slight difference between pre-test and follow-up test scores of the participants can be attributed to the fact that the participants had already complemented their lack of linguistic knowledge to some extent in the pre-test. In this sense, the effect of training was observed to be more slight in the first group speeches compared to the second group although the overall difference between the pre-test and post-test was found statistically significant (see Tables 16, 17 and 18).

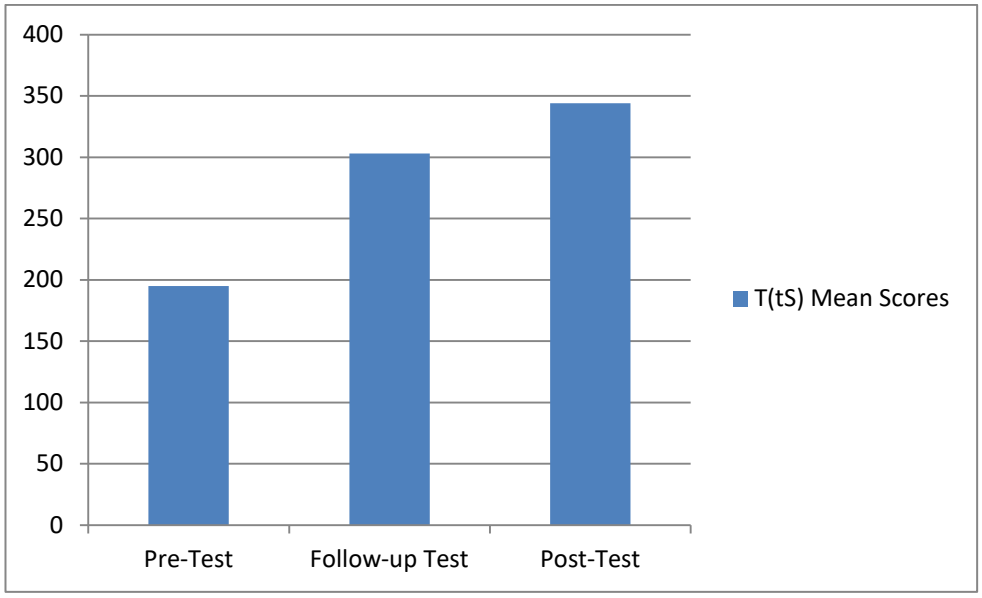


Chart 28 *Improvements of the Participants in T(tS)*

This chart presents the improvement of the participants in the second group technical text. Accordingly, the pre-test score (195) of the participants raised to (303) in the follow-up test and reached the highest point (344) in the post-test.

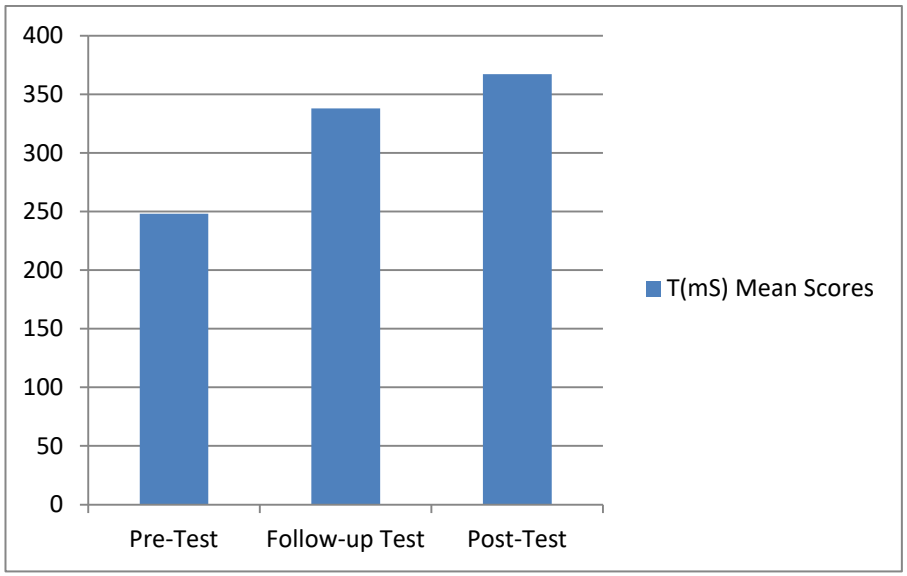


Chart 29: *Improvements of the Participants T(mS)*

In the second group medical text, the pre-test score (248) of the participants raised to (338) in the follow-up test and reached the highest point (367) in the post-test.

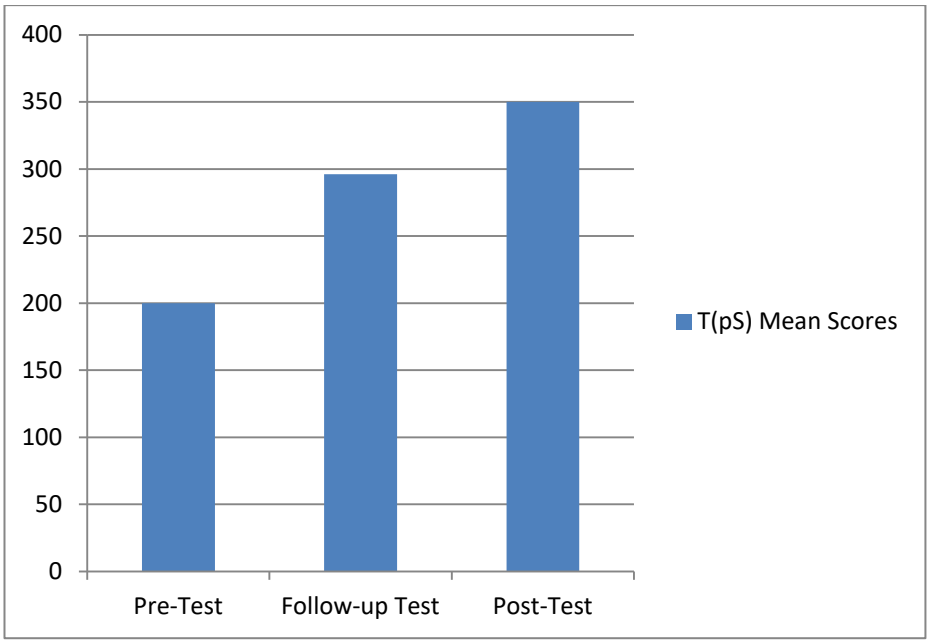


Chart 30: *Improvements of the Participants in T(pS)*

As for the second group political text, the pre-test score (200) of the participants raised to (296) in the follow-up test and reached the highest point (350) in the post-test.

As illustrated above, the effect of the training can be seen more obvious in the second group texts (see Chart 28, Chart 29 and Chart 30) rather than the first group texts (see Chart 25, Chart 26 and Chart 27). In other words, training raised the awareness of the participants towards the fact that lack of ELK can be compensated by LK. Accordingly, the training helped the participants overcome particularly the difficulty posed by the lack of ELK.

As mentioned before, relatively less effect of the training on the first group text can be attributed to the fact that the participants had already been successful in the first group speeches which required the compensation of the lack of LK with ELK. Although the interval between the pre-test and post-test scores of the participants in the first group speeches was lower, the difference between the pre-test and post-test scores was found statistically significant in both first group and second group speeches in every subject area. This finding shows that the training positively contributed to raising awareness towards complementarity between LK and ELK, and had a statistically significant effect on the SI performances of the participants.

4.4. FINDINGS AND DISCUSSIONS REGARDING THE SUB-QUESTIONS

Sub-questions (S.Q.) of the research are presented together with the findings and discussions in this section.

S.Q.1. How do the strategy uses of the participants to overcome the lack of linguistic and/or extralinguistic knowledge differ?

According to the data obtained from the comments of the participants, the most commonly used strategies to overcome the lack of LK in the first group speeches were ranged as approximate meaning (14 out of 16). In line with the self-evaluation of the participants, the statistical analysis of the interpreting performances also shows that approximate meaning was the most commonly used strategy particularly to find an equivalent to the unknown words in the first group speeches. Most unknown words, as detected by the vocabulary test at the beginning of the experiment, were interpreted with a suitable equivalent and occasionally with the exact meaning. Some equivalences found for the unknown words by the participants during SI can be exemplified as follows.

In the following sentence, the vocabulary test showed that none of the participants had known the Turkish meaning of the phrasal verb "warding off"; "*They're (T-cells) responsible for warding off diseases and most infections*". However, the lack of this particular linguistic unit did not impair the SI performances since the participants could presumably compensate their deficiency through their knowledge about T-cells and/or their world knowledge which let them presume the role of cells as "*preventing"* diseases. Most of the participants used correct and acceptable Turkish equivalences such as "*kovuşturma" (dismiss), "önleme" (prevent), "-e karşı koruma"(protect against), " mücadele etme" (combat), " savaşma" (fight off)* to define *"ward off"* although none of them knew the accurate meaning of this phrasal verb.

In another example, "*when the user puts pressure on the surface of the screen, either with a stylus or finger…*", the word *"stylus*" had not been accurately known in the vocabulary test. However, the word was interpreted into Turkish as *"kalem"* ("pen") or "*akıllı telefon kalemi" ("pen for smartphones")* during the SI of the

sentence. The accurate interpreting of such a specific unknown word can also be explained through ELK which is the knowledge of touch screen technology and its use in daily life. The sentence offers two ways of touching a smartphone screen and one of the ways is a finger. Although the word describing the second way was not uttered with a well-known linguistic unit, the participants could have accurately anticipated the meaning through their experience with smartphone and touch screen technology.

Another word, Turkish meaning of which was not known accurately in the vocabulary test was "*appalling*". In the sentence; *"So, today we are standing against the appalling actions of Daesh",* the word *"appalling"* was interpreted as "korkunç" ("horrible"), *"insanlık dışı" ("inhumane")* or "yüz kızartıcı" ("shameful") by most of the participants. In this example, being informed about the actions and crimes committed by terrorist organization DAESH, the participants could find accurate Turkish word to define this unknown word.

As can be seen in all three examples given above, the participants could compensate their lack of LK with their ELK of general human defence system, smartphone technology and a terrorist organization, respectively in the first group speeches.

For the second group texts, the most commonly used strategy was omission (12 out of 16). The highest ranking of omission as a strategy can be attributed to the comprehension difficulty in the speeches delivered on an unfamiliar topic. In parallel with the findings regarding the relevant strategy use, the assessment of the SI performances of the participants also showed that most sentences in the second group speeches were left uninterpreted. In the post-test comments, however, the most commonly used strategy was replaced by approximate meaning (14 out of 16). The change in this particular comment suggests that the training was effective on the comprehension phase of SI for the participants so that they could use a strategy to cope with problems rather than avoiding a sentence through omission.

S.Q.2. Which interpreting stage is the most impaired by the lack of LK and ELK?

According to the pre-test comments, the impaired interpreting stage(s) was reported as Reformulation by 75% of the participants for the first group speeches while Comprehension was reported as the most impaired interpreting stage by 100% of the participants for the second group speeches. Accordingly, it can be suggested that the lack of ELK mostly impairs comprehension and thus the participants had more challenges in comprehending the delivered message. Challenges in comprehending which is the first stage of SI requires interpreters to consume most of the cognitive energy at the beginning of the interpreting task. Consequently, target language and delivery quality of the SI product gets impaired as well. This is also the case in this study which shows that the participants had much lower scores from the criteria of target language and delivery for their performances in the second group speeches.

On the other hand, in parallel with the statistical data, self-reports of the participants indicate that the lack of LK does not remarkably impair comprehension stage. The participants were able to anticipate the accurate meaning of the unknown words through extralinguistic knowledge (mostly based on contextual knowledge). Cognitive energy is mostly allocated for the reformulation stage, rendering the SL message into TL in the first group speeches.

Comments of the participants to the most challenging stage during SI for the second group speeches differed in the post-test comments. Reformulation stage was reported as the most impaired stage by 75% of the participants as in the first group speeches. Hence, it can be asserted that the training program applied to the participants improved their comprehension stage during SI in the lack of ELK. Strategy use preferences of the participants, reported above (see S.Q.1), also confirm these findings.

S.Q.3. How do the attitudes of the participants towards speeches in which they lack linguistic and extralinguistic knowledge differ?

The pre-test comments are analyzed to reveal the attitudes of the participants towards the speeches in which they had the lack of linguistic and extralinguistic

knowledge. According to the data, no outstanding difference was found between the attitudes towards the speeches in which they had the lack of LK and ELK. According to the pre-test comments, most the participants had a negative attitude towards the lack of both LK and ELK in a speech delivered to be interpreted simultaneously and had the perception that the lack of either LK or ELK would fail them during SI. In other words, most of the participants were not aware of the complementarity between LK and ELK which could compensate the lack of either type of knowledge during SI. Comments of the participants to the statements are presented in charts as follows;

Statement 1: *It is possible to successfully interpret a speech involving a high level of unknown vocabulary.*

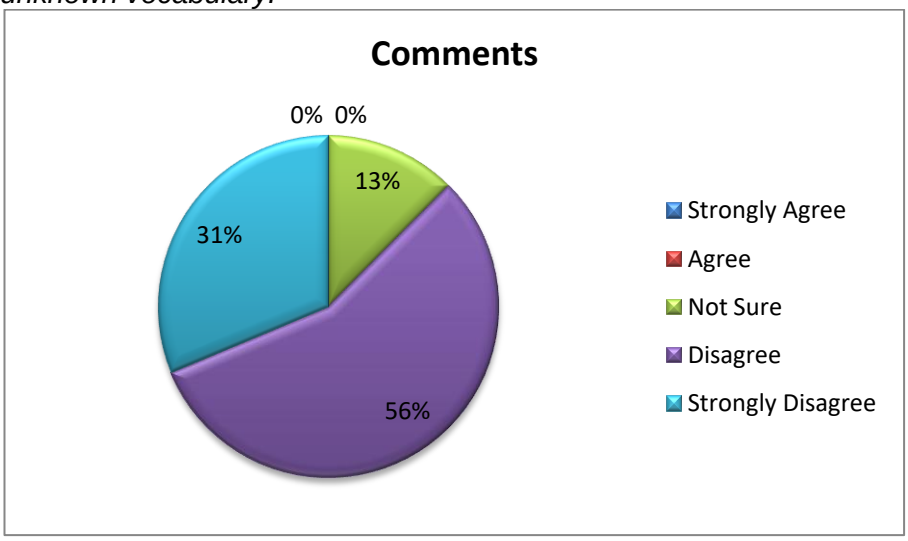


Chart 31: Pre-Test Comments to the Statement 1.

According to the chart, 5 participants (approx.31%) strongly disagreed and 9 participants (approx. 56%) disagreed with the statement while 2 participants (approx. 13%) were not sure. None of the participants strongly agreed with the statement.

Statement 2: *I thought that I would fail when I encountered the words unknown to me.*

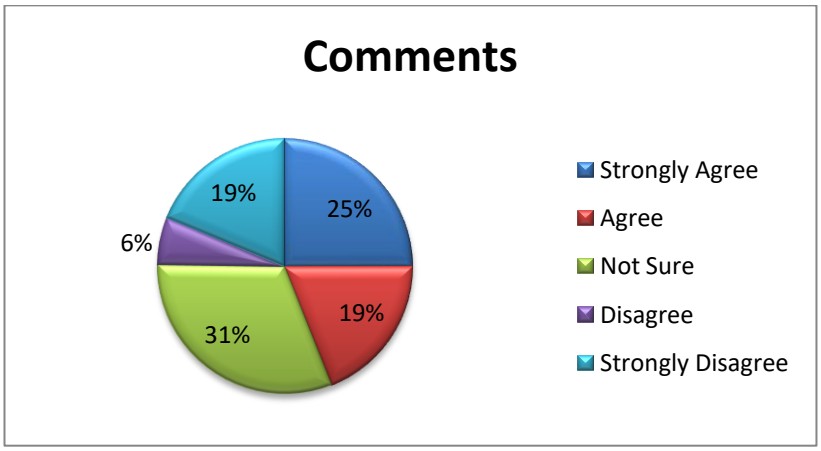


Chart 32: Pre-Test Comments to Statement 2.

As Chart 32 suggests, only 3 participants (approx. 19 %) strongly disagreed and 1 participant (approx. 6%) disagreed with the statement. A total of 5 participants (approx. 25%) strongly agreed and 3 participants (approx.19%) agreed with the statement while 4 participants (approx. 31%) were unsure.

These findings show that the participants were not aware of the complementarity between LK and ELK although they successfully interpreted the speeches involving a high level of unknown vocabulary. These results obtained from the comments are not in parallel with the performances of the participants in the first group speeches. In general terms, it can be concluded that the participants had a negative attitude towards the speeches involving unknown words.

Statement 3: *I could not understand the speeches involving words unknown to me*.

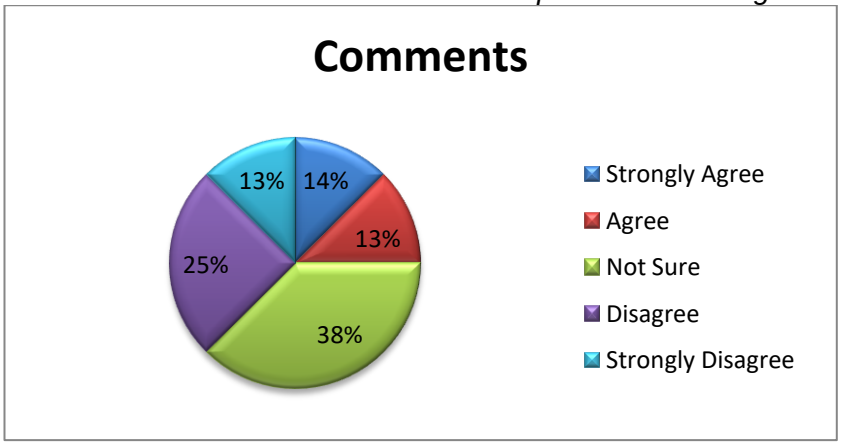


Chart 33: Pre-Test Comments to Statement 3.

Accordingly, 2 participants (approx. 13%) strongly disagreed and 4 participants (approx. 25%) disagreed with the statement. Only 2 participants (approx. 13%) strongly agreed and 2 participants (approx. 13%) agreed with the statement while 6 participants (approx. 38%) were unsure.

Only a few participants (4) agreed with the statement that unknown words adversely affected their SI performance. The comments to this statement show that the comprehension problems occured in the first group speeches were mostly irrelevant to the unknown words. It can be inferred that contextual knowledge in specific, or extralinguistic knowledge, in general, could help the participants overcome their comprehension problem regarding the unknown linguistic units.

Statement 4: *It is possible to successfully interpret a speech given on an unfamiliar topic.*

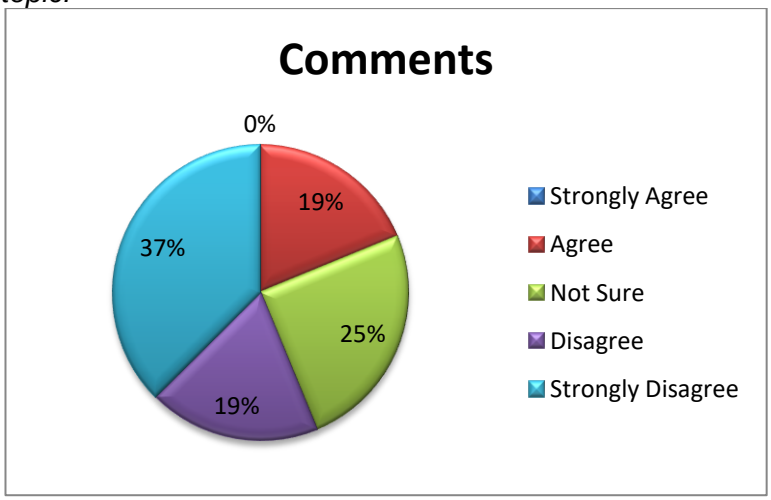


Chart 34: Pre-Test Comments to Statement 4.

Of all participants, 6 (approx. 37%) strongly disagreed, 3 (approx.19%) disagreed with the statement. Only 3 participants (approx.19%) agreed with the statement and 4 participants (approx. 25%) were not sure. None of the participants strongly agreed with the statement.

Statement 5: *I thought I would fail in interpreting when the speech was given on an unfamiliar topic.*

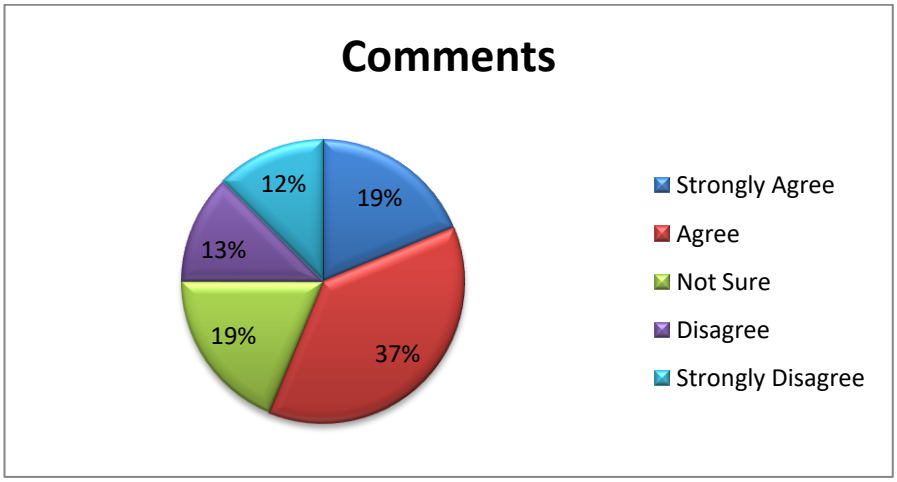


Chart 35: Pre-Test Comments to Statement 5.

Of all participants, only 2 participants (approx. 12%) strongly disagreed, 2 participants (approx. 13%) disagreed while 3 participants (approx.19%) strongly agreed and 6 participants (approx. 37%) agreed with the statement. Only 3 participants (approx.19%) were not sure.

In parallel with the comments to the statements regarding the speeches involving unknown linguistic units (see Chart 31 and Chart 32), comments of the participants to these two statements indicate that the participants were unaware of the complementarity between LK and ELK.

Statement 6: *I could not understand the speeches delivered on an unfamiliar topic.*

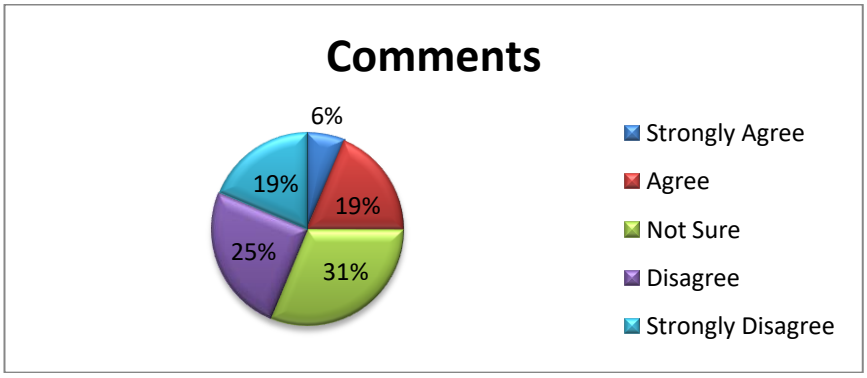


Chart 36: Pre-Test Comments to Statement 6 .

Of all participants, 3 (approx. 19%) strongly disagreed, 4 (approx. 25%) disagreed while 1 participant (approx. 6%) strongly agreed and 3 participants (approx.19%) agreed with the statement. A total of 5 participants (approx. 31%) were not sure. Accordingly, only a few participants (4 out of 16) reported that the lack of ELK adversely affected their comprehension during SI task, which is in parallel with the comment to the relevant statement regarding the lack of LK (see Chart 33). However, this finding obtained from the comments contradicts with the strategy use of the participants in the second group texts. Accordingly, the use of omission as the most common strategy indicates that the lack of ELK impaired the Comprehension stage of SI.

S.Q.4. In what ways do the results of the pre- and post-test self-evaluations differ regarding the attitudes of the participants?

The comments of the participants to the statements differed remarkably in the post-test comments which was applied following the training program. The attitude of the participants towards the lack of LK and ELK was found more optimistic and self-confident in the post-test comments. Since the interpreting speeches were applied completely identical in both pre-test and post-test, this differentiation can be attributed to the effect of the training program which was based on informing the participants and raising their awareness about complementarity between LK and ELK.

The differences between the comments of the participants in comparison with the pre-test and the post-test comments are demonstrated in charts below.

Statement 1: *It is possible to successfully interpret a speech involving a high level of unknown vocabulary.*

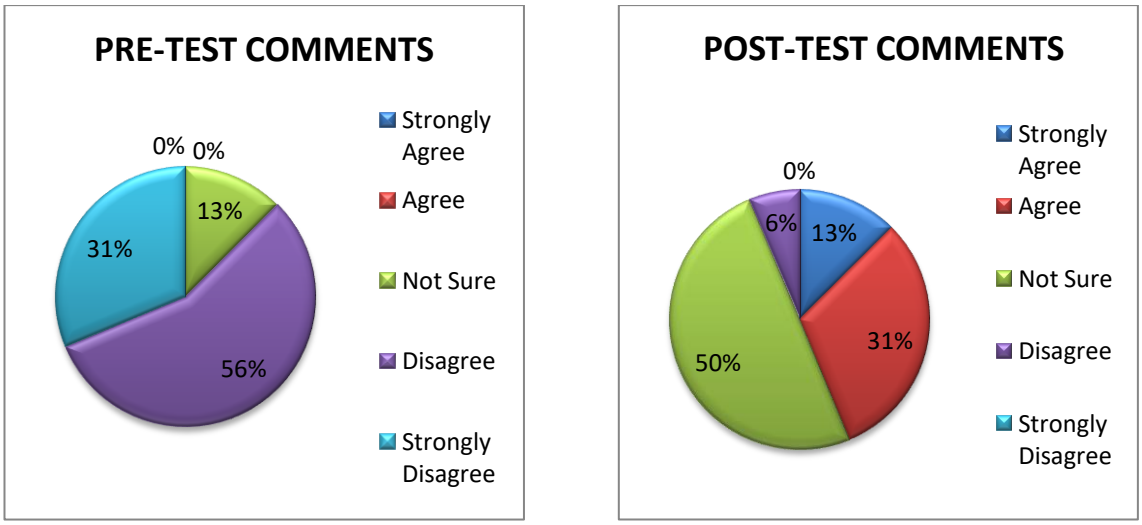


Chart 37: *Post-Test Comments to Statement 1.*

Contrary to the results obtained from the pre-test comments, none of the participants strongly disagreed with the statement and only 1 participant (approx. 6%) disagreed. Two participants (approx. 13%) strongly agreed and 5 participants (approx. 31%) agreed with the statement. On the other hand, 8 participants (approx. 50%) were unsure. Although the percentage of "not sure" increased, it can be clearly seen that most of the participants changed their idea about the lack of LK in the post-test comments.

Statement 2: *I thought that I would fail when I encountered the words unknown to me.*

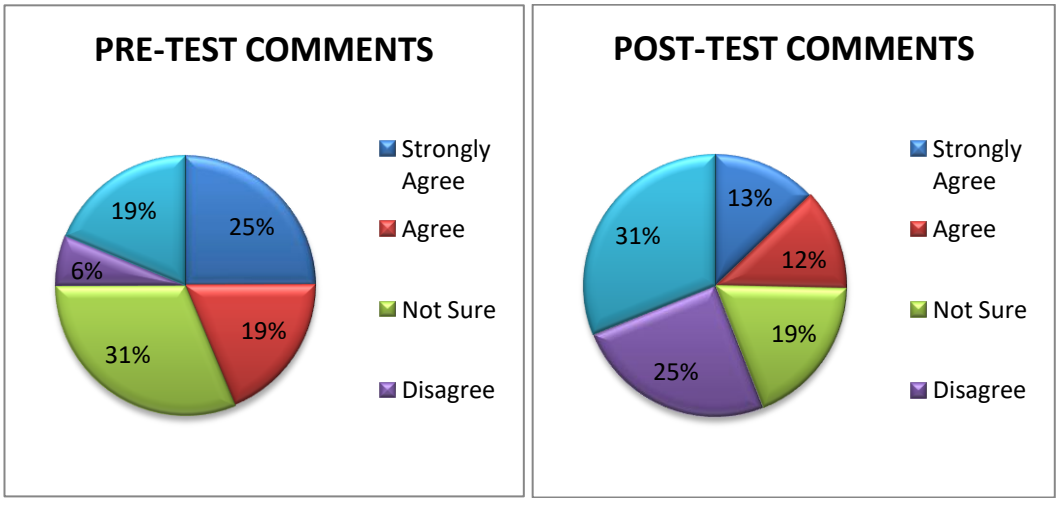


Chart 38: *Post-Test Comments to Statement 2.*

Accordingly, 5 participants (approx. 31%) strongly disagreed and 4 participants (approx. 25%) disagreed with the statement. 2 participants (approx. 13%) strongly agreed and 2 participants (approx. 12%) agreed while 3 participants (approx. 19%) were unsure. Contrary to the result obtained from the pre-test comments, the majority of the participants (9 out of 16) agreed with the statement which shows that raising their awareness towards complementarity between LK and ELK positively contributed to the self-confidence of the participants to overcome problems that may result from the lack of LK.

Statement 3: *I could not understand the speeches involving words unknown to me*.

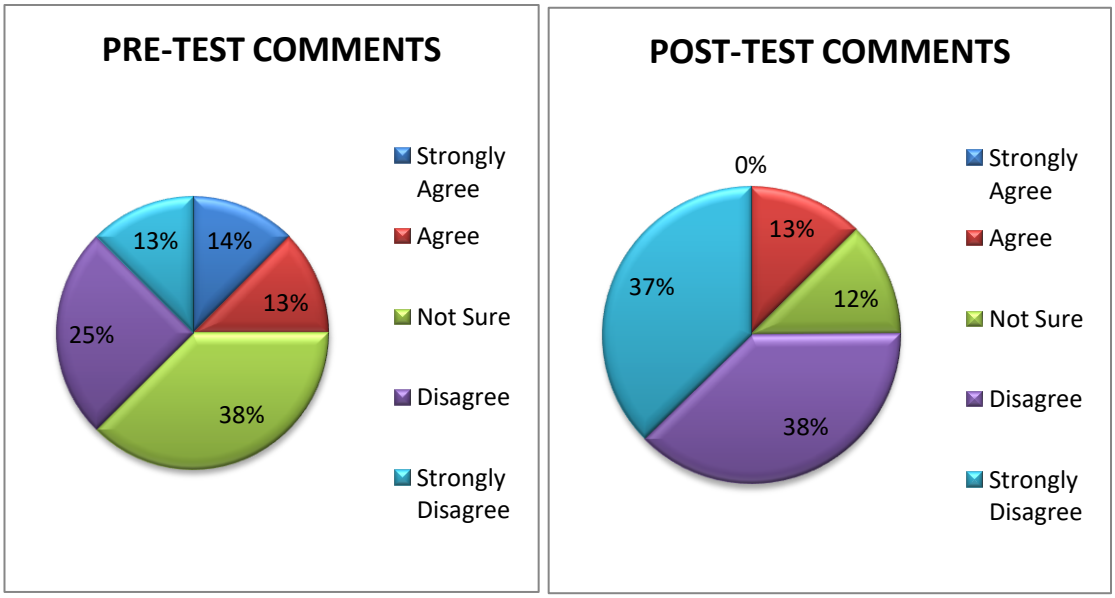
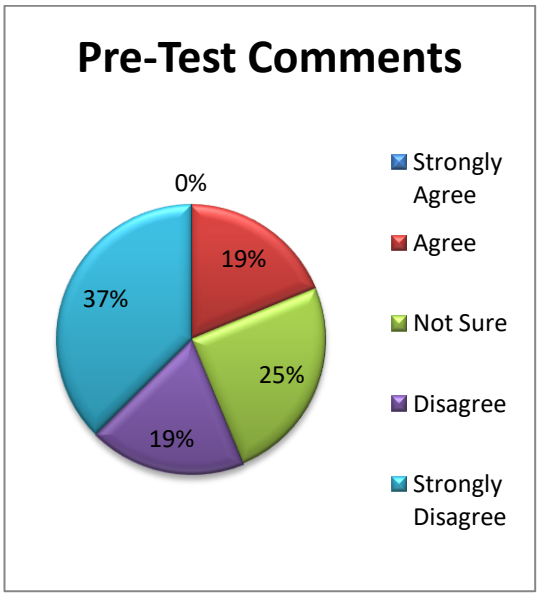


Chart 39: *Post-Test Comments to Statement 3 .*

Accordingly, 6 participants (approx. 37%) strongly disagreed and 6 participants (approx. 39%) disagreed with the statement. On the other hand, 2 participants (approx. 13%) agreed with the statement while 2 participants (approx. 12%) were unsure. Contrary to the result obtained from the pre-test comments, the majority of the participants (12 out of 16) disagreed with the statement which suggests that the words unknown to the participants impaired comprehension in the post-test comments. The differentiation between the pre-test and post-test comments shows that the training program helped the participants overcome comprehension problems related to unknown linguistic units. It is assumed that the participants

could rely on their ELK to overcome such problems so that their comprehension stage of SI was not much affected by the lack of LK.

Statement 4: *It is possible to successfully interpret a speech given on an unfamiliar topic.*



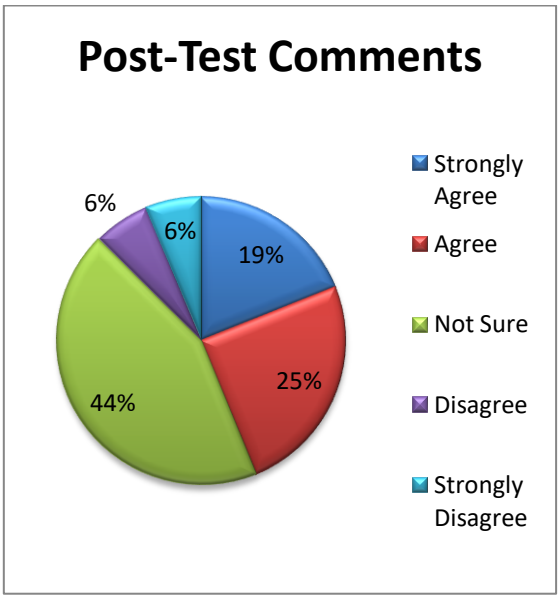


Chart 40: Post-Test Comments to Statement 4 .

Of all participants, only 1 participant (approx. 6%) strongly disagreed and 1 participant (approx. 6%) disagreed while 3 participants (approx.19%) strongly agreed and 4 participants (approx. 25%) agreed with the statement. A total of 7 participants (approx. 44%) were not sure. As can be seen, the number of those who agreed with the statement increased and those who disagreed with the statement decreased in the post-test comments, which indicates an improvement in self-confidence of the participants.

Statement 5: *I thought I would fail in interpreting when the speech was given on an unfamiliar topic.*

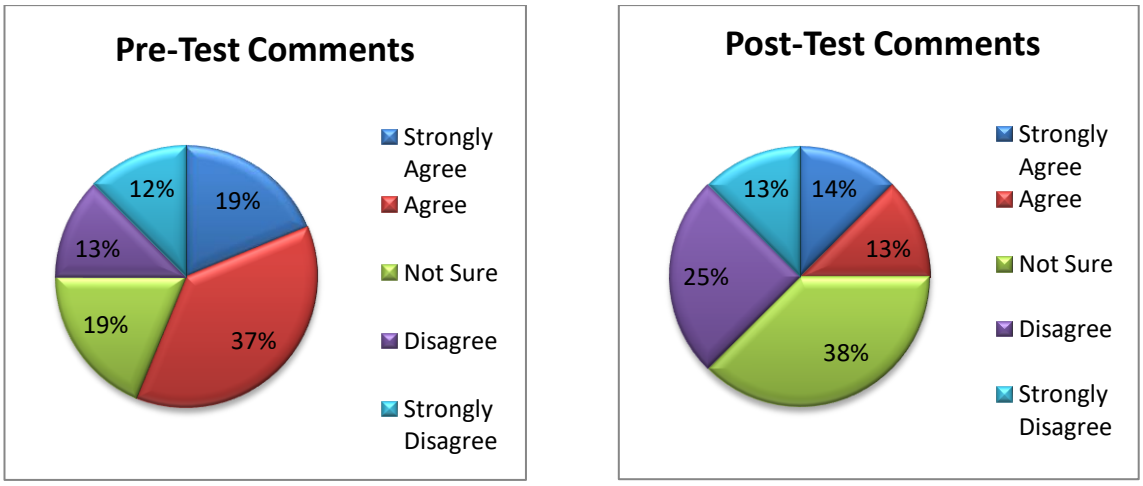


Chart 41: Post-Test Comments to Statement 5.

Of all participants, 2 participants (approx. 13%) strongly disagreed, 4 participants (approx. 25%) disagreed while 2 participants (approx. 14%) strongly agreed and 2 participants (approx. 13%) agreed with the statement. A total of 6 participants (approx. 38%) were not sure.

Statement 6: *I could not understand the speeches delivered on an unfamiliar topic.*

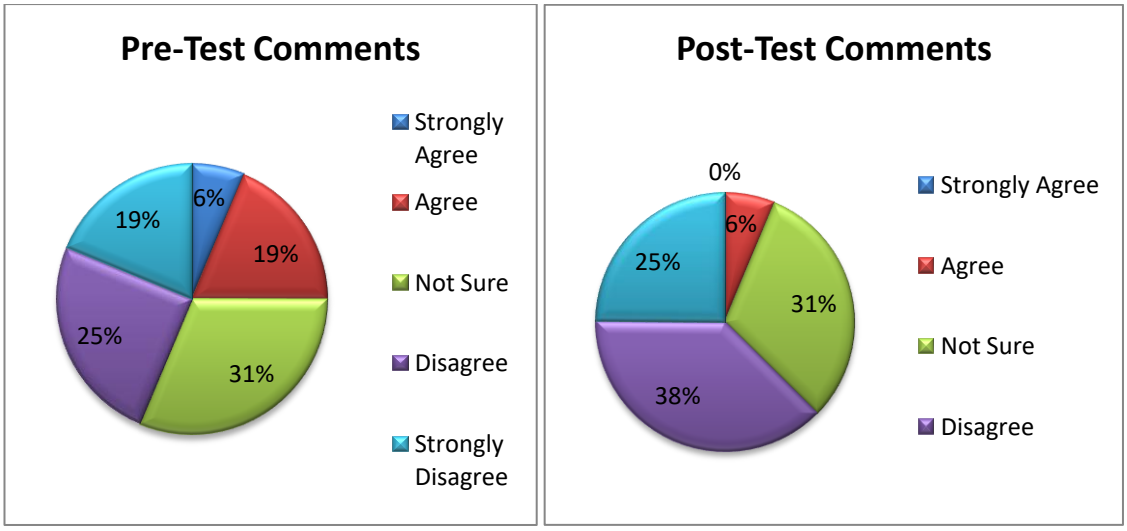


Chart 42: *Post-Test Comments to Statement 6.*

Of all participants, 4 (approx. 25%) strongly disagreed and 6 (approx. 38%) disagreed while only 1 participant (approx. 6%) agreed with the statement. None of the participants strongly agreed with the statement and 5 participants (approx.

31%) were not sure. Accordingly, most of the participants (10 out of 16) reported that the lack of ELK did not adversely affect their comprehension during the SI task. This finding is in parallel with the post-test comments finding (see Chart 18), yet the effect of training slightly increased the number of the participants who believed that the lack of ELK can be compensated in a way not to impair comprehension stage of SI.

To sum up, it can be concluded that the training on the complementarity between LK and ELK changed the views and raised awareness of the participants about the lack of LK and ELK in SI. As an overall outcome, the change in the results shows a more positive attitude of the participants to overcome problems that can be caused by the lack of LK or ELK through the knowledge and awareness on complementarity.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Simultaneous interpreting is a very complex and challenging activity which relies on a certain level of cognitive capacity which is limited in nature. The time-constraint component, which differs simultaneous interpreting from other interpreting types and translation activities, consumes all of this cognitive capacity. On the other hand, more than the consumed cognitive energy is needed to sustain the interpreting task. Otherwise, the cognitive overload of the interpreter impairs the whole interpreting performance. To be able to prevent the case of cognitive overload, the interpreter needs to rely primarily on basic competencies of a good interpreter along with the principles of interpreting and certain strategies.

The basic competencies of a quality interpreter are generally defined as good command of source/target languages and a good extralinguistic knowledge. The competency on both of the knowledge types is required to overcome time-related challenges as well as to comprehend and analyze the message to be rendered. Lederer (2003) suggests that a component interpreter must be capable of comprehending the whole sense of the message and transmit it (p. 10). The lack of linguistic and extralinguistic knowledge initially impairs comprehension stage of SI which is significant to the ensure the quality of the upcoming stages, namely deverbalization and reformulation and also puts an added burden on short-term memory. On the other hand, SI environment always takes place in a live atmosphere where language can be used in both formal and informal ways during and between speeches. Although a comprehensive terminology study is a must for every simultaneous interpreter before and after a conference, the interpret may encounter any unknown word or a group of unknown linguistic units anytime. Similarly, it is not possible to acquire all related ELK about a topic or conference environment where any unfamiliar subject can be the main topic of a speech anytime. Awareness towards the complementarity between LK and ELK can help interpreters achieve more quality SI performances in such cases.

To this end, this study was conducted to detect the complementarity between LK and ELK as well as how the lack of LK or ELK affects SI performances.

Accordingly, this study was based on one group pre-test post-test design. The experiment group included 4th grade and graduate students of the English Division of the Department of Translation and Interpretation at Hacettepe University. The test material included two groups of speeches in three different subject areas. The first group of the speeches included a high level of words unknown to the participants while the second group of the speeches included subjects unknown to the participants. The comparisons between the first group and second group speeches were made on the basis of medical, political and technical speeches in order to investigate the effect of LK and ELK on different subject areas. Following the pre-test, a three-week training was applied on the Experiment group to inform the participants about and raise their awareness towards the complementarity between LK and ELK. During the training period, the participants were informed about how either linguistic or extralinguistic knowledge can compensate the lack of the other. The improvements in the SI performances of the participants were followed through the observations of the researcher and a follow-up test.

In the post-test, the pre-test material was applied to ensure the reliability of the results. At all stages, the assessment rubric applied for scoring the SI performances of the participants included three main criteria, being (1) accuracy, (2) TL quality and (3) delivery.

As elaborated in the Findings (see Chapter 4), pre-test findings indicated that the participants believed that it is not possible to overcome the lack of LK through ELK or vice versa and they felt that they would fail when they encountered an unknown linguistic or extralinguistic unit. However, the performances of the participants were better in the first group speeches than the second group speeches. Accordingly, it was concluded that the participants were relatively successful in complementing their lack of LK through ELK. On the other hand, the findings of the second group speeches were not in parallel with the first group speeches. The scores obtained from the second group speeches were much lower. In other words, the participants could not rely on their LK to overcome the comprehension problem caused by their lack of ELK. This finding was surprising when considering the importance attached to LK rather than ELK at interpreting classes. Although preliminary vocabulary test approved that the critical words in the first group texts were unknown to the participants, most of them were capable of anticipating the accurate meaning during SI. According to this finding, the participants were in more need of a training

on the complementarity between LK and ELK to be able to overcome the problems posed by the lack of ELK. In parallel with this finding, the training was found much more effective on the second group speeches compared to the first group. As presented in the charts above (see Chart 28, 29 and 30), the SI performance the participants improved more in the second group speeches.

In this regard, it can be suggested that training programs on SI should focus on LK and ELK at the same time during practices. Although the importance of both LK and ELK is frequently underscored, the complementarity between them should also be presented through examples. Such a method of teaching in SI is believed to improve the performances of the students as well as their self-confidence which is a remarkable requirement to be successful in the profession of SI.

The conclusions that can be drawn from this experimental study can be listed as follows:

- The findings obtained from the pilot study were found in parallel with the findings of the main experiment. In this sense, the pilot study was helpful to overcome problems and challenges to be encountered during the experiment with the main research group as well as to shed light on objective assessment and statistical analysis of the possible outcomes of the main experiment.

- The lack of ELK is found to have more adverse effect on SI performance than the lack of LK does. In other words, the participants were capable of complementing their lack of LK through ELK although comments showed that their awareness levels were low towards this complementarity. On the other hand, the participants were not as successful in complementing their lack of ELK through LK.

- The mean scores of the SI performances of the participants were found very close to each other in every subject area in two groups of the speeches. While the scores of technical and political speeches were almost identical in the pre-test (320-211; 324-211, respectively), the mean scores for the medical speeches were found slightly higher (335-265) which does not present any statistically significant difference. Overall, no significant

difference was found between the political, technical and medical speeches in terms of the effect of LK and ELK.

- The training on the complementarity between LK and ELK was found effective on the SI performances of the participants. The increase in the SI performances on both first group and second group speeches and all subject areas was found statistically significant. This finding is believed to shed light on future training programs and teaching methods in SI in specific to the complementarity between LK and ELK.

- The training was also effective on the ideas and attitudes of the participants towards the lack of LK and/or ELK during SI. Following the training, the participants adopted a more positive attitude towards overcoming the problems related to the lack of LK through ELK and vice versa.

- The strategy use of the participants was found different in the first group and the second group speeches. While using the approximate meaning was the most commonly preferred strategy in the first group speeches to cope with the unknown words, omitting was preferred by the majority of the participants to cope with the problems in speeches delivered on unfamiliar topics. This difference in the strategy use also shows that the participants did not experience comprehension problems in the first group speeches as much as they did in the second group speeches.

- The strategy use of the participants in the post-test differed from the pre-test in the second group speeches. The use of omission was replaced by approximate meaning in the post-test comments as in the first group speeches. This differentiation is assumed to be related to a better comprehension phrase of SI with the contribution of the training on the complementarity.

5.1. RECOMMENDATIONS FOR FURTHER STUDIES

This research was only confined to the complementarity between linguistic and extralinguistic knowledge in simultaneous interpreting. Recommendations for further studies can be listed as follows:

- The research group of the present study was limited to student interpreters. The results of the same research may differ with professional interpreters. The same research design can be used to compare the performances of student interpreters with professionals.

- In order to increase the generalizability of the obtained results, a similar research can be conducted with larger samples.

- The same study can be repeated in A>B direction to test whether the results differ by directionality.

- A similar study can be conducted through a control and experiment group test design to observe the effect of training. In this design, the training can be given only to experiment group while the control group follows traditional course methods on SI.

- A similar research design can be applied in order to investigate the effect of advance preparation on SI performance. In this case, experiment group can be divided into two groups, one of which studies on terminology work while the other focuses on general information about the topic prior to an SI task.

- A similar research can be carried out within the scope of translation studies and practices.

The recommendations listed above can help researchers investigate the research topic in question in a more detailed and comprehensive approach and ultimately bring a contribution to the literature of interpreting studies.

Furthermore, the findings of the study can serve as a guide to improve SI performances of students by helping them overcome problems related to the lack of LK and/or ELK. Although the importance of LK and ELK is frequently reported during SI courses and various trainings are offered on certain strategies to cope with the cases involving unknown linguistic and/or extralinguistic units, students should also be informed about the complementarity between LK and ELK. The awareness towards this complementarity can help interpreters cope with the challenges of SI along with problem averting strategies which can ultimately eliminate the cognitive overload.

The training method applied in this research can be offered to SI students at the beginning of their education. In this way, they can be aware of their cognitive capacity and natural ability to compensate the lack of a knowledge type with another one which can improve SI performance of students.

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APPENDIX 1

FIRST GROUP PRE-TEST/POST-TEST MEDICAL TEXT

Good afternoon,

Distinguished participants,

Today I'll give some brief information about AIDS and HIV virus which is the cause of the disease. Let's talk about HIV first. HIV is a human virus that destroys T cells. T cells are vital for the immune system. They're responsible for **warding off** diseases and most infections. HIV targets these T cells that would normally **fight off** HIV which is an **intruder** in the body. As the virus **replicates,** it damages the infected T cells and produces more virus to infect more T cells. Without treatment, these effects cannot be **averted,** and this cycle continues until the immune system is badly **compromised**. Now, many of the effects that I mentioned are related to the **breakdown** of the immune system.Your immune system **forestalls** your body from acquiring diseases and infections. White blood cells defend you against viruses, bacteria, and other organisms can make you open to diseases and can make you **ailing** for days, weeks and even years. When HIV enters the body, it goes straight for the T cells that are l**ynchpins** for the functioning of the entire immune system. Early on, symptoms may be mild enough to be **overlooked**. Within a few months of becoming infected, most people experience symptoms of flu that last a few weeks. The first stage of HIV is called the acute infection stage. The virus reproduces **expeditiously** at this stage. AIDS is the final stage of HIV andat this stage, the risk of **contracting** infections is much greater. HIV also puts added **strain** on the heart. If you have HIV, you're also **susceptible** to tuberculosis which is the leading cause of death in people who have AIDS. In 2015, 1.1 million people lost their lives.

Thank you for listening.

APPENDIX 2

FIRST GROUP PRE-TEST/POST-TEST POLITICAL TEXT

Good morning, everybody.

I just wanted to inform you all about our activities against terrorist organization Daesh. Today, I'm going to talk about **heinous** activities of this terrorist group. In 2014, the terrorist group Daesh began to **seize** the territory in Syria and Iraq, **overrunning** major cities and committing atrocities. The United States responded quickly by **denouncing** these horrific acts and took coordinated actions to **counter** them. President Obama mobilized an international coalition, to **halt** and **reverse** Daesh's momentum. So, today we are standing against the **appalling** actions of Daesh. So far, we have degraded their leadership, attacked their revenue sources, and **disrupted** their **supply lines**. The civil war in Syria **fuels** Daesh, But, we are working intensively to stop the spread of Daesh and its **affiliates** within and beyond the region. We know that Daesh trapped tens of thousands of Yezidis. Without our **intervention**, it was clear those people would have been **slaughtered**. Daesh had already captured thousands of people and destroyed the communities in which they had been living for **countless** generations. We know that Daesh massacred hundreds of Shia Turkmen at Tal Afar and Mosul; **besieged** and **starved** them. We know that Daesh's actions are **animated** by an extreme and intolerant ideology. For example, they call Yezidis as "pagans" and "devil-worshippers and even **heretics**" Daesh does not accept Shias as muslim, either and refers to Shia Muslims as "**apostates**" and carries out frequently repeated **vicious cycle** of attacks on them. After all, the reality of genocide **underscores** the need for a comprehensive and unified approach to defeating Daesh. Although we know that it won't happen **overnight**, we must still hold these terrorists **accountable.**

Thank you.

APPENDIX 3

FIRST GROUP PRE-TEST/POST-TEST TECHNICAL TEXT

Distinguished participants,

Today. I'd like to give general information about developments in smart phones. Let's start with an easy question. What are two fundamental requirements of a smartphone?

Of course, hardware and software. As you all know hardware and software **clinch** how smartphones work. They are actually the reason why smartphones exist. Another important feature of smartphones today is touch screens. The developments in touch screens gave users a **responsive** surface and thus interfaces help users solve the overwhelming problems in using smartphones. Touch screens are divided into two types. The first one is constructed of **layers** of **conductive** material. When the user puts pressure on the surface of the screen, either with a **stylus** or finger, the layers would touch and complete an electronic **circuit.** This type is called **resistive** touch screen. The second type, on the other hand, uses the **conductivity** of the touching object -- a finger, usually to **discern** the touch. This is called **capacitive** touch screen. Today smartphones use capacitive touch screens to make touch interaction natural and **facile.** Another requirement of smartphones is memory. High-capacity data storage on small devices was not possible until the invention of flash memory has **pulled it off.** Before then, it was not possible to imagine reasonable use of smartphone. However, flash cards represent the way this technology makes smartphones **conceivable**. Flash cards are small, thin and can hold anywhere between 1GB and 64GB of data. This allows smartphones to download and store applications from the **cellular network**. It also allows smartphones to save **multiplexed** pictures, text messages and voice messages. Finally, what makes smartphones **tie** all the hardware innovations **together** is an operating system made **pointedly** for smartphone use. For example, iOS operates on Apple phones and tablets, and provides a **vigorous** platform which is always alive for mobile use, on the other hand, Google's Android and Microsoft Windows Phone 8 do the same for non-Apple phones.

APPENDIX 4

SECOND GROUP PRE-TEST/POST-TEST MEDICAL TEXT

Good afternoon everyone,

Today, I'd like to talk about Zika disease.

This disease which is mainly spread by mosquitoes takes its name from the Zika forest in Uganda. It was first identified by scientists in the 1940s. However, only a few of Zika cases had ever been documented before 2013. Scientists began sounding the alarm after multiple outbreaks were discovered in Pacific islands and south-east Asia. Since then, Zika has spread to Brazil, where scientists estimate as many as 1.5 million people could be infected. Until recently, Zika was a rare tropical disease associated with mild symptoms. However, the large-scale outbreak in Brazil led experts to link the virus to a birth defect. In this birth defect, the brain does not develop properly resulting in a smaller head than normal one. Problems can be wide-ranging, from difficulty in walking and learning, to hearing loss and vision difficulties. Virus experts who studied Zika in Brazil said they have “a lot of indirect evidence” that connects the virus to the birth defect known as abnormally small head. The US Centers for Disease Control and Prevention has said there is no direct link yet between the virus and the birth defect. Usually, Zika’s symptoms include fever, red and rash, joint pain and pink eye. However, a “high rate” of patients with Zika have no symptoms at all. This is concerning to virus experts, who believe that Zika could easily spread in the United States and other areas with tropical climates because people may not know they are infected. Virus experts studying the spread of subtropical diseases say it’s unclear why the virus, which was recently rare, spread around the world in just a couple of years. Most believe increased international travel is at least partly responsible, but others theorize that increasingly warm global temperatures could play a role.

Thank you for listening.

APPENDIX 5

SECOND GROUP PRE-TEST/POST-TEST POLITICAL TEXT

Good morning,

Today, I am truly delighted to be here with you to share a discussion about the connection between America's strategic leadership and our policies on trade.

Our presence in the Asia Pacific is essential for the protection of our own interests. And believe me – that presence is welcomed and highly valued by friends in terms of our leadership and the importance of the Trans-Pacific Partnership. There can be no doubt that TPP isn't simply a standalone deal that just affects some trade barriers and some tariff rates. It is a vehicle for raising the standards of doing business, regarding transparency and accountability between countries and the resolution of conflicts in commerce. TPP is also an agreement that is really designed for the realities of the 21st century. This is an age where if you're going to grow your company and economy of the United States, you have to export. You can't sell to yourself and expect to be able to compete and grow and lead. However, let's be clear: No one is promising that TPP is going to solve all of our social or economic challenges. But I can promise you that by rejecting TPP, by refusing to participate in it, our competitiveness is going to suffer. We will miss out on opportunities in some of the fastest growing markets on the planet, because we will not have subscribed to the very agreement we asked everybody else to subscribe to. And yes, we need to have a national debate about the TPP, but let me tell you something, that debate should be based on facts, not on exaggerated and misguided fears and negative mythology. Now there have been voices in every single generation, including our own, that insist that protectionism and trade wars will produce prosperity, and that more openness to trade is somehow going to ruin our economy. But those voices have consistently been proven wrong. So the choice for us is clear: Help define the shape of global trade and strengthen our security and our strategic leadership at the same time, or to leave the playing field to countries and actors who would prefer if the United States of America took a back seat in the Asia Pacific.

In the end, this is our choice… Thanks again for inviting me here today.

APPENDIX 6

SECOND GROUP PRE-TEST/POST-TEST TECHNICAL TEXT

Distinguished participants,

In this session, we will deal with a special topic in engineering; the continous processing. First of all, I'd like to give very brief information about the topic.
Benefits of continuous processing have been widely demonstrated by a variety of manufacturing industries. In this processing method, operation results in shorter process times thanks to the omission of some steps and also higher productivity. This method also reduces labor requirements. The continuous processing has been used in biotech operations since 1980s. The interest for the use of continuous processing in biotech operations is rapidly growing today. This growing interest is driven by the gains in productivity. Product stability and reduced cost of goods are also effective in this interest. Continuous processing includes a range of different approaches and can cover both single-step operations as well as semi continuous processes. Improvements in equipment and hardware have now facilitated several commercial systems for continuous processing. However, the use of this processing is not effective enough. Integration of process analytical technologies is the determining factor for successful implementation at clinical scale. As the implementation of various strategies for continuous processing becomes more common, the demand and need for reliability in monitoring with existing hardware solutions is steadily increasing. Now, there is a new system which meets this need. A key feature about the operation of this system is the ability to automatically cope with performance problems. For example, this system faciliates the control on the feed of raw materials into the continuous reactor. As a result, the product flowing from the reactor tends to be more consistent as the reaction parameters are better controlled. Consequently, this system significantly reduces the capital costs per tonne of product of a continuous reactor.

Thank you for your attention.

APPENDIX 7

FIRST GROUP FOLLOW-UP TEST MEDICAL TEXT

Good morning everyone,

Today I'd like to talk about diabetes. Diabetes is a medical condition in which glucose levels **amplify** in your bloodstream. The insulin in the body is not **ample** enough to move the sugar into your cells where the sugar is used for energy. Insulin is a hormone released by pancreas. The **glitch** in this hormone causes your body to **bank on** alternative energy sources in your tissues, muscles, and organs. The symptoms include thirst, craving and frequent **excretion**. If diabetes develops **instantaneously**, as happens with type 1 diabetes, symptoms can be **discernible** such as quick weight loss. If diabetes develops **haltingly**, as in type 2 diabetes, people may not be diagnosed until symptoms of longer-term problems appear, such as a heart attack and **tingling** in the feet. Type 1 diabetes is an autoimmune disease and occurs when the body's misdirected immune system **assails** and destroys insulin-producing beta cells in the pancreas. Although some presume genetic or environmental triggers as the reason, the cause of type 1 diabetes is not completely understood. Type 2 diabetes is characterized by insulin resistance in the body. Because of this resistance, the glucose **hovers** in the blood. The abnormal **build-up** of glucose called hyperglycaemia impairs body functions.

APPENDIX 8

FIRST GROUP FOLLOW-UP TEST POLITICAL TEXT

Good afternoon. Let me begin by thanking the people of Antalya and Turkey for their outstanding work in hosting this G-20 Summit. Antalya is beautiful. The hospitality of the Turkish people is legendary.

Of course, much of our attention has focused on the terrorist attack on Paris. Tragically, Paris is not alone. We've seen **egregious** attacks by ISIL in Beirut, last month in Ankara, routinely in Iraq. ISIL is the face of evil. Our goal, is to **vitiate** and ultimately **ravage** this barbaric terrorist organization.

On the military front, we are **exacerbating** our airstrikes.

We offer an **abutment** to local forces in Iraq and these forces recently **emancipated** Sinjar. So we showed that ISIL and its **warped** ideology has no safe haven in this region.

On the diplomatic front, **arbitration** is the only way to **culminate** the war in Syria. Hopes for diplomacy in Syria have been **dashed** before. There are any number of ways that this latest diplomatic push could **falter**. And there is still **bickering** between anti-Assad and pro-Assad parties. We believe has that his war against the Syrian people is the primary **agent** this crisis.

We are very **clear-eyed** about the very difficult road still head. However, the United States in partnership with our coalition, is going to remain **unrelenting** on all fronts. We have the right strategy, and we're going to see it through.

APPENDIX 9

FIRST GROUP FOLLOW-UP TEST TECHNICAL TEXT

Good afternoon everyone,

In this session, I'll touch upon Bluetooth technology

Bluetooth technology is a high speed, low powered wireless technology link. This technology is **devised** to connect phones or other portable equipment together. It is a **specification** for the use of low power radio **communications** to link phones, computers and other network devices over short distance without wires. Wireless signals transmitted with Bluetooth cover short distances. It is **attained** by **embedded** low cost **transceivers** into the devices. The frequency band **bolstered** by this technology has been **set aside** by international agreement for the use of industrial, scientific and medical **gears**. Bluetooth can connect up to “eight devices” simultaneously. Bluetooth Network consists of a Personal Area Network which **embodies** a minimum of 2 to maximum of 8 bluetooth **peer** devices. Usually a single **master** and up to 7 **slaves**. A master is the device which **commences** communication with other devices. The master device governs the communications link and traffic between itself and the slave devices associated with it.

APPENDIX 10

SECOND GROUP FOLLOW-UP TEST MEDICAL TEXT

Distinguished participants,

Today I'll give some general information about a very rare disease called Progeria.

Progeria is an extremely rare and fatal genetic disease of childhood. This disease is caused by a genetic mutation. The mutation occurs in a gene which is responsible for producing a protein to maintain the structural integrity in cells. Without such integrity, a cell's structure is weak. This leads to rapid aging. While progeria affects genes, experts don't think it's hereditary. However, for parents who have never had a child with Progeria, the chances of having a child with Progeria are 1 in 4 million. But for parents who have already had a child with Progeria, the chances of it happening again to those parents is much higher – about 2-%. Why the increase? This is due to a condition called "mosaicism", where a parent has the genetic mutation for Progeria in a small proportion of their cells, but does not have Progeria. Progeria isn't curable, but treatment to manage the disease is available. Ongoing research has identified some promising drug options. For example, your child's doctor may prescribe aspirin, statins, physical therapy. The average lifespan for people with progeria is 13 years. People with progeria are at heightened risk of many health conditions. For example, they tend to dislocate their hips easily. Most of them eventually experience heart disorders and stroke. It's very common for children with progeria to develop atherosclerosis, or hardened and narrowed arteries. Death occurs almost exclusively due to widespread heart disease, the leading cause of death worldwide. As with any person suffering from heart disease, the common events for Progeria children are high blood pressure, strokes, and heart failure.

APPENDIX 11

SECOND GROUP FOLLOW-UP TEST POLITICAL TEXT

Good afternoon, everybody.

I just finished speaking with IRS personnel who improperly screened conservative groups applying for tax-exempt status. Today I wanted to inform you all about what we're doing about this. I've reviewed the report. I will not tolerate this kind of behavior in any agency, but especially in the IRS,given the power that it has and the reach that it has into all of our lives. And as I said earlier, it should not matter what political view you're from; the fact of the matter is, is that the IRS has to operate with absolute integrity. The government generally has to conduct itself in a way that is true to the public trust. That's especially true for the IRS. First, we're going to hold the responsible parties accountable. Today, we took the first step by requesting and accepting the resignation of the acting commissioner of the IRS, because given the controversy surrounding this audit, it's important to institute new leadership that can help restore confidence going forward. Second, we're going to put in place new safeguards to make sure this kind of behavior cannot happen again. Our Administration has to make sure that we are working hand in hand with Congress to get this thing fixed. Congress, Democrats, and Republicans owe it to the American people to treat that authority with the responsibility it deserves and in a way that doesn't smack of politics or partisan agendas because I think one thing that is reported in the IG report is an outrage.

APPENDIX 12

SECOND GROUP FOLLOW-UP TEST TECHNICAL TEXT

Good afternoon everyone,

We are here to discuss about some landfill gas control mechanisms.

As you all know, many landfills install gas control measures because of regulatory requirements. These regulations have been developed to reduce health and environmental impacts from landfill gas emissions through the reduction of ozone precursors, methane, and odorous compounds. Odor complaints or potential safety and health concerns may also prompt landfill gas collection. Sulfide emissions are a common source of landfill odor complaints. The goal of a landfill gas control plan is to prevent people from being exposed to landfill gas emissions. This goal can be achieved by either collecting and treating landfill gas at the landfill or by preventing landfill gas from entering buildings and homes in the community. Technologies used to control landfill gas at the landfill or in the community can be applied separately or in combination. Landfill gas can be collected by either a passive or an active collection system. A typical collection system, either passive or active, is composed of a series of gas collection wells placed throughout the landfill. The number and spacing of the wells depend on landfill-specific characteristics, such as waste volume, density, depth, and area. Today, active collection system is considered the most effective way for landfill gas collection.

APPENDIX 13

VOCABULARY TEST

Değerli Katılımcılar,

Aşağıda verilen Türkçe kelimeleri karşılayabilecek en iyi İngilizce kelimeyi karşısında bırakılan boşluğa yazınız. Her İngilizce kelimenin iki veya daha fazla baş harfi ipucu olarak verilmiştir. Süreniz **20 dakikadır.**

Medikal

1) tehlikeye atmak	com_____
2) geri püskürtmek	re_____
3) tekrarlama, çoğalma	repl_____
4) hastalığa yakalanmak	co_____
5) engellemek	fore_____
6) göz ardı etmek	ov_____
7) istilacı , işgalci	int_____
8) önemli, temel taşı	li_____
9)yük	st_____
10) hasta	ai_____
11) engellemek	wa____ / _____
12) hızlı	ex_____
13) (hastalığa) yatkın	su_____
14) bozulma, arıza	br_____
15) önlemek	ave_____

1) hastalığın bulaşması co_____

2) atfetmek, ilişkilendirmek at_____

3)farzetmek/ ortaya kuram atmak th_____

4)kusur, özür defe_____

5)rahim ut_____

6) mikroskobik bulaşıcı ajan vi_____

7) salgın, patlak verme ou_____

8) olağan dışı ab_____

9) görüş, görme vi_____

10) hastalıkta ateş fe_____

11) eklem jo_____

12) (hastalıkta) belirti sy_____

13) yaygın olmayan unc_____

14) sivrisinek mo_____

15) hastaneye yatırmak ho_____

SİYASİ

1. canlandırmak an_____

2. altını çizmek, önemini belirtmek unders_____

3. kınamak de_____

4. işgal etmek, ele geçirmek ov_____

5. kesmek, durdurmak ha_____

6. karşılık vermek, karşı çıkmak co_____

7. bölmek, aksatmak di_____

8.tersine çevirmek re_____

9.katliam yapmak sl_____

10. aç bırakmak st_____

11. kuşatma altına almak be_____

12.ele geçirmek se_____

13. körüklemek,beslemek fu_____

14. aşağılamak deg_____

15.korkunç, dehşet ap_____

16. ilişkilendirmek, bağlantı kurmak af_____

17. dinden dönmüş ap_____

18. barbarlık, mezalim at_____

19. derhal, hızlı bir şekilde ov_____

20. çok sayıda co_____

21. menfur, çirkin (saldırı) he_____

22. hat, yol li_____

23. gelir, hasılat re_____

24. kafir, inançsız he_____

25. sorumlu, hesap sorulabilir ac_____

26. hava saldırısı ai_____

27. putperest, dinsiz pa_____

TEKNİK

1. ticaret	tr_____
2. gümrük vergisi	ta_____
3. şeffaflık	tr_____
4.güvence, itimat	as_____
5. ticaret	co_____
6. çözüm, uzlaşı	re_____
7.ihracat	ex_____
8. üye olmak	su_____
9. tartışma	de_____
10. abartmak	ex_____
11. beslemek, geliştirmek	fo_____
12.yanlış yönlendirmek	misg_____
13. sınır	bou_____
14. refah	pr_____
15. tutarlı, istikrarlı	cons_____
16. yarışmak	co_____
17. söz vermek, taahhüt etmek	co_____
18. korumak	pr_____
19.oy vermek	vo_____
20. koltuk, kürsü, makam	se_____
21. göz ardı etmek	ig_____
22. güvenlik	sec_____

23. önemli, kritik st_____

24. tek biçim, normal st_____

25. çağ, nesil ge_____

26. varlık, bulunma pr_____

27. anlaşma, antlaşma ag_____

APPENDIX 14

RATING SCALE FOR SI QUALITY ASSESSMENT

RATING SCALES (BANDS)

CRITERIA (EXAMPLES)	BAND	EXTENT OF FAITHFUL DELIVERY OF MESSAGE	LISTENING ABILITY
Accuracy: - the quality of faithfully conveying the message of the speech with semantic and pragmatic equivalence i.e. reproducing the same meaning and intended effect - Deviations from the ST should be considered in terms of the effect on the coherence/logic and faithful rendering of the message - Examples of deviations: omissions, additions, and unjustifiable changes of the meaning	6	The message was delivered accurately with intended effect.	*Complete understanding of the message of the original speech*
	5	The message was generally delivered with intended effect but a few minor deviations from the source text were found, which did not significantly affect the overall meaning or coherence.	*Good understanding of the message of the original speech*
	4	The overall message was delivered but some deviations from the source text with an impact on the meaning and effect but coherence was maintained.	*Adequate understanding of the message of the original speech*
	3	The message was delivered inaccurately with many deviations from the source text and coherence was compromised.	*Inadequate understanding of the message of the original speech*
	2	The message was delivered inaccurately with serious deviations from the source text and incoherence.	*Poor understanding of the message of the original speech*
	1	The interpreted message was incoherent and completely inconsistent with the source text.	*Very limited understanding of the message of the original speech*
	0	Test abandoned/unfinished.	
	Mark		**/6**
CRITERIA (EXAMPLES)	**BAND**	**GRADUATION OF TARGET LANGUAGE PRODUCTION**	**TARGET LANGUAGE PROFICIENCY**
TL Quality: - the quality of rendering in TL needs to be linguistically correct and appropriate in the context	6	Excellent target language production with few linguistic errors and appropriate target language expressions.	*Excellent language proficiency*
	5	Very good target language production with a few minor linguistic errors that do not hinder immediate target language comprehension and generally appropriate target language expressions.	*Very good language proficiency*
Examples of deviations from language norms : incorrect pronunciation, accent, and stress; incorrect grammar, unidiomatic language; interference from the source language; inappropriate language in the target culture and for the target audience (register misuse)	4	Good target language production with a few linguistic errors that may hinder immediate comprehension, but quite understandable. A few minor inappropriate target language expressions were found.	*Good language proficiency*
	3	Adequate target language production with some linguistic errors that hinder comprehension and some inappropriate target language expressions.	*Adequate language proficiency*
	2	Inadequate target language production with many linguistic errors and inappropriate target language expressions were consistently found.	*Inadequate language proficiency*
	1	Poor target language production with inappropriate target language expressions	*Poor language proficiency*
	0	Test abandoned/unfinished	
	Mark		**/6**
CRITERIA (EXAMPLES)	**BAND**	**EXTENT OF DELIVERY**	**PUBLIC SPEAKING ABILITY**
Delivery: - quality of good public speaking - successful communication Examples of deviations: inarticulate speech, pauses, hesitation, false starts, fillers, irritating noise, repetition, excessive repairs or self-correction, unconvincing voice quality and monotonous intonation, & irritatingly slow speech rate	3	Excellent delivery with few deviations	*Excellent presentation/communication*
	2	Good delivery with a few deviations	*Good presentation/communication*
	1	Poor delivery with some deviations	*Poor presentation/communication*
	0	Test abandoned/unfinished	
	Mark		**/3**
Total mark			**/15**

Table 1. Rating scales

APPENDIX 15

ORIGINALITY REPORT

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YÜKSEK LİSANS/DOKTORA TEZ ÇALIŞMASI ORJİNALLİK RAPORU

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İnşaat Mühendisliği **ANABİLİM DALI BAŞKANLIĞI'NA**

Tarih: 04/07/2017

Tez Başlığı / Konusu: Ankara Genelinde Dijital ve Dijital Dışı Bilginin Sürdürülebilirliği

Yukarıda başlığı/konusu gösterilen tez çalışmamın a) Kapak sayfası, b) Giriş, c) Ana bölümler ve d) Sonuç kısımlarından oluşan toplam 117 sayfalık kısmına ilişkin, 30/06/2017 tarihinde şahsım/tez danışmanım tarafından Turnitin adlı intihal tespit programından aşağıda belirtilen filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezimin benzerlik oranı % 5 'tür.

Uygulanan filtrelemeler:
1- Kabul/Onay ve Bildirim sayfaları hariç,
2- Kaynakça hariç
3- Alıntılar hariç/dâhil
4- 5 kelimeden daha az örtüşme içeren metin kısımları hariç

Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Çalışması Orjinallik Raporu Alınması ve Kullanılması Uygulama Esasları'nı inceledim ve bu Uygulama Esasları'nda belirtilen azami benzerlik oranlarına göre tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Gereğini saygılarımla arz ederim.

Tarih ve İmza 04.07.2017

Adı Soyadı: Özge BAKLACIOĞLU ÖZER
Öğrenci No: N14224499
Anabilim Dalı: İnşaat Mühendisliği
Programı: YL
Statüsü: ☒ Y.Lisans ☐ Doktora ☐ Bütünleşik Dr.

DANIŞMAN ONAYI

UYGUNDUR.

Prof. Dr. Aykut DOĞAN
(Unvan, Ad Soyad, İmza)

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
THESIS/DISSERTATION ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
TO THE DEPARTMENT OF TRANSLATION AND INTERPRETATION

Date: 04/07/2017

Thesis Title / Topic: Complementarity between Linguistic and Extralinguistic Knowledge in Simultaneous Interpreting

According to the originality report obtained by myself/my thesis advisor by using the Turnitin plagiarism detection software and by applying the filtering options stated below on 30/06/2017 for the total of 117 pages including the a) Title Page, b) Introduction, c) Main Chapters, and d) Conclusion sections of my thesis entitled as above, the similarity index of my thesis is 5 %.

Filtering options applied:

1. Approval and Decleration sections excluded
2. Bibliography/Works Cited excluded
3. Quotes excluded
4. Match size up to 5 words excluded

I declare that I have carefully read Hacettepe University Graduate School of Social Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.

Date and Signature

Name Surname: Özge BAYRAKTAR ÖZER
Student No: N14224499
Department: English Translation and Interpretation
Program: MA
Status: ☑ Masters ☐ Ph.D. ☐ Integrated Ph.D.

04.07.2017

ADVISOR APPROVAL

APPROVED.

Prof. Dr. Aynur DOĞAN
(Title, Name Surname, Signature)

APPENDIX 16

ETHICS BOARD WAIVER FORM

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
TEZ ÇALIŞMASI ETİK KURUL İZİN MUAFİYETİ FORMU

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
Mütercim Tercümanlık ANABİLİM DALI BAŞKANLIĞI'NA

Tarih: 04/07/2017

Tez Başlığı / Konusu: Anadan Çocuğa Dilsel ve Dil Dışı Bilginin Bütünleştirilmesi

Yukarıda başlığı/konusu gösterilen tez çalışmam:

1. İnsan ve hayvan üzerinde deney niteliği taşımamaktadır,
2. Biyolojik materyal (kan, idrar vb. biyolojik sıvılar ve numuneler) kullanılmasını gerektirmemektedir.
3. Beden bütünlüğüne müdahale içermemektedir.
4. Gözlemsel ve betimsel araştırma (anket, ölçek/skala çalışmaları, dosya taramaları, veri kaynakları taraması, sistem-model geliştirme çalışmaları) niteliğinde değildir.

Hacettepe Üniversitesi Etik Kurullar ve Komisyonlarının Yönergelerini inceledim ve bunlara göre tez çalışmamın yürütülebilmesi için herhangi bir Etik Kuruldan izin alınmasına gerek olmadığını; aksi durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Gereğini saygılarımla arz ederim.

Tarih ve İmza
04.07.2017

Adı Soyadı: Özge Bayraktar Özer
Öğrenci No: N14224499
Anabilim Dalı: TMT
Programı: YL
Statüsü: ☑ Y.Lisans ☐ Doktora ☐ Bütünleşik Dr.

DANIŞMAN GÖRÜŞÜ VE ONAYI

Uygundur

Prof. Dr. Aynil Doğan
(Unvan, Ad Soyad, İmza)

Detaylı Bilgi: http://www.sosyalbilimler.hacettepe.edu.tr
Telefon: 0-312-2976860 **Faks:** 0-3122992147 **E-posta**: sosyalbilimler@hacettepe.edu.tr

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ETHICS BOARD WAIVER FORM FOR THESIS WORK

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
Translation and Interpretation **TO THE DEPARTMENT PRESIDENCY**

Date: 04./07./2017

Thesis Title / Topic: Complementarity between Linguistic and Extralinguistic Knowledge in Simultaneous Interpreting

My thesis work related to the title/topic above:

1. Does not perform experimentation on animals or people.
2. Does not necessitate the use of biological material (blood, urine, biological fluids and samples, etc.).
3. Does not involve any interference of the body's integrity.
4. Is not based on observational and descriptive research (survey, measures/scales, data scanning, system-model development).

I declare, I have carefully read Hacettepe University's Ethics Regulations and the Commission's Guidelines, and in order to proceed with my thesis according to these regulations I do not have to get permission from the Ethics Board for anything; in any infringement of the regulations I accept all legal responsibility and I declare that all the information I have provided is true.

I respectfully submit this for approval.

Date and Signature

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ADVISER COMMENTS AND APPROVAL

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İş Deneyimi

Stajlar	: EDF Konferans Çevirmenliği Turizm Ltd. Şti. - Sözlü Çevirmen, 2012-2014
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