Research Article / **Araştırma Makalesi**

Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi (BAİBÜEFD)

Bolu Abant Izzet Baysal University Journal of Faculty of Education

2024, 24(4), 2408 – 2433. https://dx.doi.org/ 10.17240/aibuefd.2024..-1345071

Directionality and Individual Differences in Consecutive Interpreting*

Ardıl Çeviride Çevirinin Yönü ve Bireysel Farklılıklar

Zeynep BAŞER[1], **Mehtap ARAL**[2]

Geliş Tarihi (*Received*): 17.08.2023 **Kabul Tarihi (*Accepted*):** 30.10.2024 **Yayın Tarihi (*Published*):** 15.12.2024

Abstract: This study aims to examine the students' consecutive interpreting in English and Turkish. This study was carried out with 32 senior students who are native Turkish speakers at the Department of English Translation and Interpreting. The students were required to render the speeches chosen from the EU Speech Repository, a speech bank for interpreting studies, in the En-Tr and Tr-En directions, respectively. The students were audio-recorded. In addition, students' working memory (WM) capacities were determined by conducting digit span and word span tests, and attention levels were determined by conducting monolingual and bilingual Stroop test. The data was assessed with the overall assessment score of consecutive interpreting performance, total duration, pauses, linguistic errors, participants' individual differences (WM and attention level), and directionality. The recordings were transcribed and assessed by two experts. A detailed error analysis was performed using MAXQDA Analytics Pro Academic. Students with higher WM levels also have better performance in the En-Tr direction, yet this is not observed in the Tr-En. This can be explained by the fact that students have more difficulty and spend more time interpreting to L2 due to their language proficiency in translation (such as lack of vocabulary, difficulties related to structure, etc.). There was no significant relationship between students' attention skills and interpreting performance. Differences were also observed in the errors and strategies used by students depending on directionality. It is expected that this study will contribute to understanding the consecutive interpreting process, revealing the main difficulties, and thereby contributing to interpreter training.

Keywords: Consecutive interpreting, Directionality, Working memory, Attention level, Interpreter training

&

Öz: Bu çalışmanın amacı, İngilizce ve Türkçe dil çiftinde ardıl çeviri süreçlerini incelemektir. Ana dili Türkçe olan son sınıf 32 İngilizce mütercim tercümanlık öğrencisiyle gerçekleştirilmiştir. Çalışmada öğrenciler, sözlü çeviri çalışmaları için oluşturulan bir konuşma bankası olan EU Speech Respository'den seçilen konuşmaları İng-Tr ve Tr-İng sırasıyla tercüme etmişlerdir. Öğrencilerin sesleri kaydedilmiştir. Ayrıca katılımcıların işleyen bellek kapasiteleri, rakam aralığı ve kelime aralığı testleri uygulanarak; dikkat seviyeleri ise tek dilli ve iki dilli Stroop renk ve kelime testi ile belirlenmiştir. Çalışmada elde edilen veriler; başta ardıl çeviri performansı genel değerlendirme puanı, çeviri süresi, duraklamaları, çeviride dilbilimsel hatalar, katılımcıların bireysel farklılıkları (işleyen bellek ve dikkat seviyesi) ve çevirinin yönü koşulu (yabancı dilden ana dile doğru ya da anadilden yabancı dile doğru) ile ilişkilendirilmektedir. Katılımcıların çevirilerinin transkripsiyonu yapılmış ve ses kayıtlarıyla birlikte iki uzman tarafından değerlendirilmiştir. MAXQDA Analytics Pro Academic kullanılarak detaylı hata analizi yapılmıştır. Elde edilen verilere göre İng-Tr yönünde ardıl çeviride işleyen bellek seviyeleri daha yüksek olan öğrencilerin çeviri performanslarının daha iyi olduğunu göstermiştir. Aynı bulgu Tr-İng ardıl çeviride görülmemiştir. Bunun nedeninin öğrencilerin yabancı dile doğru çeviride dil yeterlilikleri nedeniyle (kelime eksikliği, yapı ile ilgili zorluklar vs.) daha fazla zorlanmaları ve daha uzun süre harcamalarıyla açıklanabilir. Öğrencilerin dikkat kontrolü becerileri ile ardıl çeviri performansları arasında anlamlı bir ilişki görülmemiştir. Çalışmada ayrıca çeviri yönüne bağlı olarak öğrencilerin yaptıkları hatalar ve kullandıkları stratejiler arasında da önemli farklılıklar gözlemlenmiştir. Bu çalışmanın tipolojik olarak farklı iki dil arasındaki çeviri yönüne bağlı olarak değişiklik gösteren ardıl çeviri süreçlerini anlamaya, karşılaşılan temel zorlukları ortaya çıkarmaya ve tercüman eğitimine katkıda bulunması beklenmektedir.

Anahtar Kelimeler: Ardıl çeviri, Çeviri yönü, İşleyen bellek, Dikkat seviyesi, Çeviri eğitimi

Atıf/Cite as: Başer, Z., & Aral, M. (2024). Directionality and individual differences in consecutive interpreting. *Bolu Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 24(4), 2408*.-2433. https://dx.doi.org/ 10.17240/aibuefd.2024..-1345071.

İntihal-Plagiarism/Etik-Ethic: Bu makale, en az iki hakem tarafından incelenmiş ve intihal içermediği, araştırma ve yayın etiğine uyulduğu teyit edilmiştir. / This article has been reviewed by at least two referees and it has been confirmed that it is plagiarism-free and complies with research and publication ethics. https://dergipark.org.tr/tr/pub/aibuelt

* Bu çalışma TÜBİTAK 1002 kapsamında 122K557 numaralı projeye dayalı olarak üretilmiştir.

[1] Sorumlu Yazar: Dr. Öğr. Üyesi Zeynep BAŞER, Kırıkkale Üniversitesi, İnsan ve Toplum Bilimleri Fakültesi, Batı Dilleri ve Edebiyatları Bölümü, İngilizce Mütercim ve Tercümanlık Ana Bilim Dalı, zeynepbaser@kku.edu.tr, ORCID: 0000-0003-4391-4075.

[2] Dr. Öğr. Üyesi Mehtap ARAL, Kırıkkale Üniversitesi, İnsan ve Toplım Bilimleri Fakültesi, Batı Dilleri ve Edebiyatları Bölümü, İngilizce Mütercim ve Tercümanlık Ana Bilim Dalı, mehtaparal@kku.edu.tr, ORCID: 0000-0002-1375-1431.

1. INTRODUCTION

Interpreting is divided into four types depending on how it is performed (or modality) (Pöchhacker, 2016, p. 18–20). These include consecutive interpreting, simultaneous interpreting, whispering, and on-sight translation, among which consecutive and simultaneous interpreting are frequently used. Although interpreting is needed in various important areas such as conferences, public spheres, business, and diplomatic negotiations, the number of interpreters trained in Türkiye and all over the world is very deficient (Gile, 2009). The main reason for this is that interpreting is often more challenging as compared to translation. The general difficulties include; (i) due to its nature, the speech has to be interpreted with the help of memory and/or notes in a very short period of time, thereby making it more prone to errors and not sparing enough time to correct them; (ii) there is no opportunity to research the subject matter during interpreting, and (iii) for simultaneous interpreting, input and output need to be processed simultaneously, thus creating cognitive load, and for consecutive interpreting, the cognitive effort required for note-taking and listening needs to be distributed in a balanced way in order to retain the input in memory during listening (Gile, 2009, Pöchhacker, 2016, Setton & Dawrant, 2016, Doğan, 2012).

Consecutive interpreting requires four types of cognitive efforts: listening and analysing effort, memory effort, production effort, and coordination effort over a certain period of time. Gile (2009) suggested these efforts based on the knowledge that interpreting requires mental effort in a limited provider and that performance will be negatively impacted if more is required. *Listening and analysing effort* is the effort spent perceiving the message while listening to the speaker. *Memory effort* includes processes such as keeping sounds and meanings in mind in short-term memory while listening to the source speech, choosing the words, determining the structural rules of the target language, and keeping the things in the mind before taking notes. *The production effort* is composed of two stages. The first one is the production by taking notes while listening to the speaker, and the second one is the production of the message in the TL by using notes and memory. Finally, *the coordination effort* is the effort to coordinate the time allocated to these efforts. It is noted that if more effort is required in a process, it affects interpreting performance. Although Gile stated that there are fewer problems in consecutive interpreting as compared to simultaneous interpreting and that the time shortage for efforts can be a problem mainly in the listening and analysis phase, he highlights that "Thinking of target-language 'equivalents' in the source language while listening takes up extra processing capacity. This is done during the listening phase, which is critical in terms of processing capacity, and may therefore increase risks of saturation." (Gile, 2009:179).

Apart from these, directionality also plays an active role in the process of interpreting. As posited in the literature, there are two opposing views. The first is that interpreting is most accurate from a foreign language (L2) to a native language (L1) (Bros-Brann, 1976), whereas the other is that the person will interpret a speech in their L1 better (Denissenko, 1979). However, this issue is still not well-understood (Gile, 2005; Baser, 2021). For many years, the prevailing view has been that interpreting from L1 to L2 is more challenging and takes longer. It is clear that interpreters may need to use different strategies depending on the direction. However, recent empirical studies show that this does not necessarily mean that one aspect of interpreting requires more cognitive effort than the other and that other factors may also have an impact (Whyatt, 2018). For instance, due to the cognitive skills required for interpreting, individual differences, especially in terms of memory and attention capacity, as well as the effect of language pairs (e.g., English and Turkish), have attracted attention (Gile, 2005). Due to the typological differences in the English-Turkish language pair, direction-related problems in interpreting will also emerge. Therefore, this study aims to investigate the relationship between consecutive interpreting performance, directionality (English-Turkish, Turkish-English), and individual differences among senior students taking consecutive interpreting courses in the Department of English Translation and Interpreting.

This study aims to reveal the difficulties encountered by student interpreters in the process of interpreting (i.e., consecutive interpreting within the scope of this study) and to examine the effects of individual

differences (working memory (WM) and attention level) and directionality (En-Tr, Tr-En) on the process of interpreting. It is expected to reveal that there might be a strong relationship between student interpreters' performance and their WM and attention levels, especially when directionality (En to Tr and Tr to En) and typological differences (esp. word order) between English and Turkish are taken into consideration. Additionally, the present study seeks to clarify the main challenges in interpreting from L1 to L2 or from L2 to L1 and the strategies student interpreters use to cope with these challenges. In this context, the research questions are as follows:

1. What is the relationship between students' consecutive interpreting performance and WM in terms of directionality (En-Tr and Tr-En)?

2. What is the relationship between students' consecutive interpreting performance and attention levels in terms of directionality (En-Tr and Tr-En)?

3. What is the relationship between students' self-assessment of consecutive interpreting and performance?

Data will be analysed both quantitatively and qualitatively in light of (i) the students' performance scores, (ii) pauses while interpreting, (iii) linguistic errors (semantic and structural), (iv) the strategies they used, and (v) their self-assessments.

In Yemenici's (2019) study, the competencies that interpreters should possess (e.g., following current issues, being familiar with their own culture, etc.) are discussed. Furthermore, she touches on the role of memory capacity, which is the biggest building block of interpreting. The interpreter's ability to utilise their memory capacity in the most effective way in a limited period of time is crucial to interpreting. The process of interpreting consists of three steps that require full attention and supervision (Yemenici, 2019). The first step is that the interpreter should be able to completely focus on the speaker's words and accurately transmit the message. This step is called the comprehension and perception phase. In the second step, the interpreter analyses what they have heard and writes down what they have understood using symbols and abbreviations. In the third step, the interpreter should organise the ideas expressed by the speaker in their mind by making use of the notes they have taken and convey the speaker's message fluently in the target language. This is the production phase of interpreting. These phases were first pointed out in Gile's Effort Model, and according to this model, time and memory constraints in interpreting can result in a small number of units in interpreting (2009:100-113), given that more time is required for the process of note-taking and the capacity of short term memory plays an essential role.

There are some studies on the effect of language and individual differences in interpreting. For instance, in their study on simultaneous interpreting with 10 professional interpreters, Chia-Chien Chang and Dianet Schallert (2007) reported that problems arise due to the fact that the grammatical order of Chinese is different from English. The inability of the participants to hear the pronoun hampered the interpreting process, forcing them to proceed with caution. In another study, Lee Yun Hyang (2003) came to the conclusion that student interpreters made more semantic errors while interpreting to L1 and that they made more errors at the level of accent, style, and pronunciation. In Färber's (2002) study on the relationship between students' simultaneous interpreting in the German-English language pair and directionality, it was found that interpreting to L2 was more accurate.

Recent research on consecutive interpreting is also substantial, despite the fact that there are often more studies on simultaneous interpreting in the literature. For instance, in their study with a group of 61 native Chinese and English student interpreters, Cai et al. (2015) investigated the role of memory capacity in consecutive interpreting and the factors affecting the process of interpreting. WM and proficiency in L2 were found to be substantially associated with consecutive interpreting performances at the beginning and end of the training. Chen (2020) evaluated pen-recording and eye-tracking data in his consecutive interpreting study with 18 professional interpreters. More specifically, he found that while interpreting to L1, interpreters paid great attention to the listening phase and that the amount of time spent between hearing and note-taking changed depending on the direction. In note-taking, it was discovered that notes

from L1 to L2 utilised more symbols, whereas notes from L2 to L1 used more linguistic notation. When the results of eye tracking were examined, the cognitive load was less when interpreting from L2 to L1. However, it was reported that interpreting from L1 to L2 was better in terms of accuracy.

There are some studies on directionality in other language pairs (Tommola & Helvä, 1998; Lee, Yun-Hyang, 2003; Färber, 2002, etc.), yet only Öztürk (2012, 2020) has an empirical study on directionality in consecutive interpreting in English and Turkish. In her study on the relationship between simultaneous interpreting and directionality, Öztürk came to the conclusion that students were better at simultaneous interpreting from L2 to L1, yet they transferred propositions better from L1 to L2, and there was no significant difference in the strategies in terms of directionality. Despite the fact that Öztürk's study is an essential source, there is no study that deals with directionality and the cognitive dimension of interpreting in the English and Turkish language pair, namely WM capacity and attention levels.

2. MATERIALS and METHODS

The present study aimed to examine directionality and the effect of individual differences in interpreting. Cognitive differences are expected in interpreting depending on WM (high or low), attention/focus level, and directionality (forward, L1 to L2, or backward, L2 to L1). In fact, supporting evidence is also reported in the relevant literature.

In this study, Digit Span Test and Word Span Test, both of which measure the storage capacity of human memory, were used to test the WM of the participants. Furthermore, the attention levels of the participants were tested using the Stroop Task. Later, the students were asked to perform consecutive interpreting in two directions, and they were audio-recorded. The recordings were transcribed verbatim for the analysis. The students' interpreting performance in the En-Tr and Tr-En directions was scored by two independent raters using the assessment scale developed by Lee (2008). This inter-rater reliability was also assessed using Cohen's Kappa value through SPSS.

Lastly, students were asked to use the retrospective thinking protocol and thus evaluate their interpreting performance and the strategies they employed, as well as indicate where they had difficulty in interpreting and their self-assessments about note-taking.

In the evaluation part, how the participants' interpreting scores were related to their WM capacities and attention levels was evaluated quantitatively. The explanations of the students using the retrospective thinking protocol and their notes during consecutive interpreting were used to obtain a better picture of the quantitative data. Besides, the overall time of interpreting in both directions and pauses were compared with the students' interpreting scores, WM capacity, and attention levels.

2.1 Participants

Participants included 32 senior students from the Department of English Translation and Interpreting at Kırıkkale University, Türkiye. Given that students got into the same department with similar foreign language proficiency and they all completed the mandatory English preparatory class or passed the proficiency exam, a language proficiency test was not administered within the scope of this study. Before the Consecutive Interpreting course, students completed English Speaking, Communication Skills, Introduction to Interpreting, Note-Taking Techniques, and On-Sight Translation courses as prerequisites.

2.2 Working memory tests

Working memory has two capacities: storage and processing (Baddeley and Hitch, 1974). Storage capacity is related to the task of retaining information and can be measured with simple interval tests. A processing capacity test requires simultaneously storing and controlling information, and thus it is measured by more complex tests (Juffs and Harrington, 2011). In this study, a Digit Span Test and a Word Span Test were used to measure storage capacity. In the Digit Span test, participants are presented with a series of numbers,

either written or oral (usually between 1 and 9), and are expected to repeat these numbers. After each successful repetition, the participant is presented with a longer string of digits, and the longest number sequence that the participant can repeat is determined as the participant's digit span. Cambridge Brain Science's Range of Digits Test was used for this study. The Word Span test is a simple test used to measure the level of phonological WM. Participants are expected to repeat a series of monosyllabic words in the given order. The number of words in the sequence increases until the participant makes a mistake, and as in the Digit Span test, the participant's score is determined by the longest word sequence. In this study, the Word Span test adapted to Turkish by Ünal (2008) was used.

2.3 Attention control test

To test the attention levels of the participants, the Stroop colour and word test was administered in monolingual and bilingual forms. In these tests, participants are expected to read three different tables in accordance with the instructions. In the first table, the colours written in black are read; in the second table, the colours of the given colour blocks are uttered; and in the third table, the colours of the words written in a different colour are said (e.g., the answer is expected to be "red" when the word "green" is written in red). In the bilingual Stroop test, the language in which the word colour is written differs from the language in which the colour is expected to be said (e.g., when the word "green" is seen written in red, it is expected to say "kırmızı" in Turkish, not “red” in English) (Preston and Lambert, 1969; Köpke and Nespoulous, 2006; Scarpina and Tagini, 2017).

2.4 Source Texts

In order to ensure an understanding of the difficulties in consecutive interpreting, the effects of individual differences, and the strategies employed, two speeches were selected from the EU Speech Repository database. These include a beginner level Turkish speech entitled "Çince Öğrenmek (Learning Chinese)" of 5 min. 49 sec. and an English speech entitled "Oceans and Seas" with a beginner level of 5 min. 54 sec.

In this study, the EU Speech Repository, which was created as a result of a project by the Directorate General of Translation of the European Commission, was selected given that the speeches were prepared for educational purposes and they were separated into different levels. Beginner level speeches consist of expressions, names, and numbers of varying length and intensity that require note-taking as well as making use of memory. It is, thus, expected to provide an understanding of interpreting errors, different strategies used, individual differences, and the effects of directionality on interpreting performance. Furthermore, the pauses and total interpreting durations of these speeches were calculated. The data were correlated with the results of the participants' WM and attention levels.

2.5 Assessment of interpreting performance

The assessment scale created by Lee (2008) was used to grade the students' performances in the En-Tr and Tr-En directions. This scale consists of three criteria. The first is Accuracy in interpreting, which includes errors such as addition, omission, unjustifiable changes, or inaccurate message. The second is grammar, pronunciation, syntax, naturalness, and register, in other words, Target Language (TL) quality. The third is Delivery, which covers communication skills such as pause, self-correction, repetition, um voice, sniffle and cough voice, sigh, laughing voice, pronunciation, and self-speaking. According to Jieun Lee's scale, the accuracy mark is 6, the target language quality mark is 6, and the delivery mark is 3, 15 in total.

Retrospective Thinking Protocol: In order to reveal the strategies used by the participants and the challenges encountered while interpreting in En-Tr and Tr-En, the participants were asked to give retrospective comments after the interpreting. Participants were asked where they had difficulty interpreting in both directions and what strategies they used. The qualitative data will be discussed by comparing them with other relevant data.

2.5. Ethical approval of the study

In this study, all the rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics," have been carried out.

Ethics committee permission information

Name of the ethical review board: Kırıkkale University Social Sciences and Humanities Research Ethics Committee

Date of ethical assessment decision: 18.10.2021

Ethical assessment certificate number:10

3. RESULTS

3.1 Reliability Between Evaluators

In this study, as mentioned above, the consecutive interpreting assessment scale developed by Lee (2008) was employed. Accordingly, the students' performance was assessed under 3 main criteria. These are accuracy, target language (TL) quality, and delivery. The total score that students can receive is 15: 6 for accuracy, 6 for TL quality, and 3 for delivery. The En-Tr and Tr-En interpreting performances of each student were evaluated by two different experts.

3.1.1 Assessment of En-Tr Interpreting

The similarity was 78% between the raters for students' En to Tr interpreting performance. Cohen's K was examined to determine whether there was reliability between the two raters. Cohen's K value was found to be 0.631. According to Altman's (1999) guidelines and the study of Landis and Koch (1977), a Kappa (K) of 0.631 indicates significant reliability among raters, K = 0.631 (95% CI, 0.388 to 0.874)), $p < .01$ ($p = 0.000$). This agreement between the raters was considered acceptable.

3.1.2 Assessment of Tr-En Interpreting

The similarity was 62.5% between the raters for the students' Tr-En interpreting performance. Cohen's K was also examined to determine if there was reliability between the two raters. Cohen's K value was found to be 0.312. Based on Altman's (1999) guidelines and the study of Landis and Koch (1977), a Kappa (K) of 0.312 indicates reasonable reliability among evaluators, K = 0.312 (95% CI, 0.013 to 0.611), $p < 0.01$ ($p = 0.014$). Considering the fact that the scores given by the raters were not significantly different, this similarity above 60% was acceptable. As previously pointed out, according to Lee's scale, the accuracy mark is 6, the target language quality mark is 6, and the delivery mark is 3, which makes 15 in total. For instance, the total score for one student is 6 for rater 1, whereas it is 7 for rater 2. The difference never exceeds 3 marks in total, which is the case only for 4 students among 32 students, and the majority of the ratings are similar.

3.1.3 In which direction are students more successful in consecutive interpreting?

The highest score that students received from both raters out of 15 points was 13.5, and the lowest score was 4.5 in En-Tr interpreting. The average score of all students was 9.03 points. The highest score that students received from both raters out of 15 was 14.5, and the lowest score was 4 in Tr-En interpreting. The average score received by all students was 8.31.

When the students' En-Tr and Tr-En scores were compared, there was a positive and strong correlation according to the paired samples t-test results, r = 0.715, $p < 0.001$ ($p = 0.000$), and a significant difference between the scores received in En-Tr and Tr-En interpreting, t (31) = 2.054, $p < 0.05$ ($p = 0.048$), according to which the En-Tr interpreting scores were 0.72 points higher than the Tr-En scores (95% CI [0.005 and 1.432]).

As a result, it was found that the performance in the En-Tr direction [M=9.03, SD=2.60] was stronger than the performance in the Tr-En direction [M=8.31, SD=2.63].

3.2 Interpreting performance and WM

The Word Span and Digit Span tests were administered to assess the WM of the students, and it was examined whether they had a relationship with the interpreting scores they received during consecutive interpreting in the En-Tr and Tr-En directions.

First, one-way analysis of variance (one-way ANOVA) was applied to understand whether word span (low or high) had an effect on interpreting scores. The results showed a statistically significant difference in the scores of students with low and high word span in consecutive interpreting in the direction of En-Tr, F (1, 30) = 6.178, $p < 0.05$ ($p = 0.019$). Accordingly, it was observed that those with a high-level word span scored higher in consecutive interpreting in the direction of En-Tr. However, there was no significant difference in the scores of students with low and high word spans in the direction of Tr-En.

To better understand the students' overall performance, the three criteria of the assessment scale developed by Lee (2008), namely accuracy, TL quality, and delivery scores, were further examined. For this purpose, a one-way analysis of variance (one way ANOVA) was used to evaluate the effect of word span level on each criterion of the interpreting score in the En-Tr and Tr-En directions. The results showed a significant relationship between word span level and TL quality during consecutive interpreting in the direction of En-Tr, F (1, 30) = 4.717, $p < 0.05$ ($p = 0.038$). Accordingly, it was observed that students with a high word span performed better and scored higher in the En-Tr direction compared to those with a low word span. On the other hand, while there was no relationship between word span level and accuracy scores, it was observed that there was a relationship with delivery in the En-Tr direction that could be considered important in consecutive interpreting, F (1, 30) = 3.717, $p > 0.05$ ($p = 0.63$). Accordingly, it can be said that those with a high word span show better performance in delivery. In the Tr-En direction, no significant relationship was determined. In addition to the scores obtained from the interpreting scale, the errors made by the students under these criteria were also examined. According to the one-way analysis of variance through SPSS, no significant relationship was determined. However, it can be said that those with a higher word span show fewer errors in delivery.

In the En-Tr direction, delivery errors include self-correction, sigh, laughing, pronunciation errors, um voice, sniffle and cough voice, pause, self-speaking, and repetition. In total, 70% of the 660 speech errors belong to the um voice category. On the other hand, 53% of the total 656 delivery errors in the Tr-En direction belong to the um voice category. Paired sample t-test analysis revealed a statistically significant difference between um voice depending on the direction of the consecutive interpreting, i.e., in the En-Tr direction (M= 14.50, SD= 8.926) and in the Tr-En direction (M=10.78, SD= 9.472), t(31)=2.708, $p < 0.05$ ($p = 0.011$). Accordingly, it was concluded that students had significantly more um voices during consecutive interpreting in the En-Tr direction.

Accuracy errors in the En-Tr direction include addition, inaccurate tense, unjustified change, inaccurate message, unfinished sentence, and omission. In total, 67% of the 373 accuracy errors belong to omissions. On the other hand, while interpreting in the Tr-En direction, 82% of the total 343 accuracy errors belong to omissions. However, there was no significant difference between En-Tr and Tr-En. TL quality errors in the En-Tr direction consist of a total of 31 errors spread across 18 categories of codes: case-suffix linguistic error, interference of source language, genitive suffix linguistic error, singular-plural noun linguistic error, etc. Therefore, a weighted error type has not been identified. Likewise, there were 181 TL errors in the Tr-En direction, but no weighted error type has been identified.

In summary, it was observed that there was a significant relationship between the WM results and the interpreting scores based on the word span test in the En-Tr direction of interpreting, and this was also statistically significant with the criteria of delivery and TL quality in the assessment scale, respectively. In the Tr-En direction, there was no significant relationship between the word span test and interpreting

scores. This may be due to the different strategies used for consecutive interpreting into L2, depending on language proficiency, note-taking skills, and directionality.

A one-way ANOVA was also performed to figure out the effect of the digit span level (low and high) on students' scores in both directions. The Digit Span test was administered both forward and backward. Analysis of the results from the forward digit span test showed a statistically significant difference between individuals with low and high digit spans in the Tr-En direction, $F\ (1, 30) = 4.915$, $p < 0.05$ ($p = 0.034$). However, no significant difference was observed in the En-Tr direction. Accordingly, it was observed that individuals with a low digit span obtained higher scores in the Tr-En direction. This relationship between low digit span and high-performance scores in the Tr-En direction can be explained by the fact that students have better L2 proficiency, although they have a lower level of digit span, and the note-taking and strategies they use might have influenced their performance. This will be discussed along with the further analysis of the students' errors, the strategies they used, and their scores in consecutive interpreting. When the results of the backward digit span analysis were examined, there was no significant difference in the scores of the students in consecutive interpreting in general and detailed analysis (according to the criteria of accuracy, TL quality, and delivery).

3.3 Interpreting performance and attention levels

The Stroop colour and word test was administered in monolingual and bilingual modes to test the attention levels of the students. By using the Stroop Test, one way ANOVA was performed to figure out whether there was a relationship between complex attention control skills and students' scores in consecutive interpreting. According to the analysis of the results of the Stroop Test consisting of a total of 6 sections, there was no significant difference between the students' complex attention control skills and interpreting scores, in general and/or in detailed analysis (accuracy, TL quality, and delivery). Therefore, it can be said that students' attention skills, based upon the Stroop test results, do not have an effect on consecutive interpreting performance.

3.4 Interpreting performance and self-assessment

In the Retrospective Thinking Protocol, students were asked to evaluate their consecutive interpreting in the En-Tr and Tr-En directions, speeches, and their own performances. Regarding the consecutive interpreting they performed in the En-Tr direction, the students were first asked to evaluate the speech under the categories of accent, speed of speech, difficulty level, and content/familiarity with the subject. Accordingly, 28 of the 32 students found the accent of the speech easy and understandable, while 2 students rated it as difficult and 2 students as intermediate. As for the speed of speech, 13 of the students rated it as understandable, 15 as moderate (neither slow nor fast), and 4 as fast (at a level that makes it difficult to understand). About the difficulty level of speaking, 12 students rated speaking as easy, 18 students as moderate, and 2 students as difficult. Finally, when the students' evaluations about the content of the speech and familiarity with the subject were examined, 28 of the students stated that they were understandable and familiar with the subject, while 2 students stated that it was difficult, and 2 students rated it intermediate. In brief, although 87.5% of the students described English speech as easy and understandable in terms of accent and familiarity with the content/topic, they rated it as follows: speed of speech (41% easy, 59% moderate-difficult) and difficulty level (37.5% easy, 62.5% medium-difficult). According to the results of the one-way ANOVA, it was found that there was a substantial relationship, though not statistically significant, between the students' assessments about the difficulty level of speech and the scores they received, $F\ (2, 29) = 2.817$, $p = 0.076$. It can be predicted that students to whom the speech is easy also receive higher scores in interpreting performance.

Regarding the Tr-En direction, the students evaluated the speech they listened to in Turkish under 4 categories. While all the students found the accent of the speech in their native language, Turkish, easy and understandable, 17 students indicated that the speed of the speech was normal and understandable, 11

students stated that it was moderate, and 4 students said that it was very fast and that they had difficulty understanding. Likewise, for the assessment of the difficulty of speech, 18 students stated that it was easy, 11 students stated that it was moderate, and 3 students stated that it was difficult. 22 of the students stated that they were familiar with the content of the speech; 6 students said that the subject was at an intermediate level; and 4 students rated it difficult. To sum up, all of the students found the speaker's accent appropriate, while 68.75% stated that they were familiar with the content. Speech was rated as follows: speed (53% easy) and difficulty (56% easy). According to the results of the one-way ANOVA, it was found that there was a significant relationship, though not statistically significant, between the students' assessments about the difficulty level of the speeches and the interpreting scores, $F(2, 29)=2.664$, $p=0.087$. In this regard, it can be predicted that the students who find the speech easier also receive higher scores in interpreting performance.

In the Retrospective Thinking Protocol, the students were also asked where they had difficulty in consecutive interpreting and how they coped with the challenges. More specifically, the problems encountered by students in the En-Tr direction are mainly stated as follows: (i) inability to remember speech and incomplete recall, (ii) difficulty in summarising, (iii) unknown words, (iv) difficulty taking notes due to the speech of speech, and (v) difficulty understanding sentences in En.

The methods of coping with the problems encountered can be summarised as follows: (i) using another word that does not distort the meaning if a word cannot be remembered in TL; (ii) splitting long sentences to make them easier to remember and express; (iii) omitting parts that are difficult to understand.

Similar difficulties were reported in the Tr-En direction, but the students also brought up their inadequate vocabulary knowledge. In addition, it was observed that they made more omissions as a method of coping with the problems. Accordingly, the main difficulties in the Tr-En direction are as follows: (i) not being able to remember or recognise the English equivalent of words; (ii) not being able to decide which word to use, (iii) not being able to decide what structure to use in English; (iv) difficulty recalling due to missing notes.

The main strategies used to cope with these problems include using a synonym or omitting words, dividing sentences into shorter chunks, and omitting parts that do not distort the meaning. Students' note-taking strategies are presented in the next section.

3.5 The relationship between Note-Taking Skills, Performance Scores and Individual Differences

When the notes taken by the students in the Tr-En and En-Tr directions were examined, it was found that 26 out of 32 students (81%) took notes in the source language (English), 1 student (3%) in the target language (Turkish), 2 students (6%) took notes in both languages but heavily in Turkish, and 3 students (10%) took notes in both languages but heavily in English in the En-Tr direction. In the Tr-En direction, it was observed that 25 out of 32 students (78%) took notes in the source language (Turkish), 2 students (6%) in the target language (English), and 5 students (16%) took notes in both languages, but heavily in Turkish. Based on these data, it can be said that student interpreters are predominantly inclined to take notes in the source language. The students used at least one abbreviation while taking notes. However, the use of figures is not observed in all the students. In the En to Tr direction, 16 (50%) of 32 students used figures, and 16 (50%) did not. In the Tr to En direction, 18 (56%) of the students used figures, and 14 (44%) did not. In other words, students did not show any tendency towards using figures. When the strategies used by the students while taking notes, such as margin, drawing line between messages, and mind map were examined, it was found that 3 (9%) out of 32 students used mind map, 6 only used margin (19%), 4 (13%) used both margin and drawing line between messages, and 19 (59%) did not use any strategies while taking notes for the En-Tr direction. While taking notes for interpreting in the Tr-En direction, 3 (9%) of the 32 students used a mind map, 2 (6%) only margin, 3 (9%) only drawing line between messages, 4 (13%) used

both margin and drawing line between messages, and 20 (63%) did not use any strategies. The majority of students did not prefer to use specific strategies in note-taking.

When the students were asked whether they had difficulty reading their notes, 11 (34%) out of 32 stated that they had no difficulty in the Tr-En direction, 20 (63%) had difficulty reading their notes, and 1 (3%) student stated that they had some difficulty. 4 of the students stated that they had difficulty reading their notes because of their own handwriting, 1 had difficulty understanding their notes because they did not write the verbs, and 1 had difficulty because of the quality of the pen in which they wrote their notes. In the Tr-En direction, 17 (53%) out of 32 students stated that they did not have difficulty reading their notes, and 15 (47%) had difficulty. 6 of the students reported that they had difficulty reading the notes due to their own writing, and 3 said that they had difficulty understanding the abbreviations they wrote. When the rates of difficulty in reading the notes in both directions were examined, it was found that they had more difficulty in reading the notes taken in the En-Tr direction. The results suggest that the students mainly took notes in English and had difficulty reading the English words they wrote and understanding the context. Students had less difficulty reading and interpreting the notes they took in their native language, Turkish.

In response to the question of what they took note of, and considering that some of the students gave more than one answer, 5 (14%) students responded that they took note of keywords, 15 (41%) main ideas, 4 (11%) subjects, objects, verbs, 1 (3%) contrast conjunctions, 1 example (3%), 1 introduction-conclusion, 3 (8%) numbers, 1 (3%) redundant information, and 6 (17%) everything possible. It was observed that the students predominantly took note of the main ideas and keywords, while some of them tried to note the entire speech. In the Tr-En direction, 15 (46%) students responded that they took notes of main ideas, 4 (12%) keywords, 3 (9%) subjects, objects, verbs, 1 (3%) example, 1 (3%) number, 1 (3%) cause and effect, and 8 (24%) everything possible. It was observed that the students mainly took notes on the main idea and keywords when taking notes in the En-Tr direction, but the number of students who tried to take notes on everything was slightly higher in the En-Tr direction. It was observed that the WM and attention skills of the students did not make a statistically significant contribution to their note-taking during consecutive interpreting.

When the En-Tr and Tr-En interpreting durations were examined, a statistically significant difference was observed in the consecutive interpreting durations of the students depending on directionality. Students' consecutive interpreting lasts 330 seconds at the longest, 75 seconds at the shortest, and an average of 215.09 seconds in the En-Tr direction. However, their consecutive interpreting lasts 428 seconds at the longest, 88 seconds at the shortest, and an average of 251.41 seconds in the Tr-En direction. According to the paired samples t-test results, there was a strong negative correlation, $r = 0.681$, $p < 0.001$, ($p = 0.000$), and there was a significant difference in the interpreting durations spent in the En-Tr and Tr-En directions, $t(31) = -3, 489$, $p = 0.001$. Accordingly, it was observed that the time spent in the Tr-En direction was 36.313 seconds longer (95% CI [-57.541 and -15.084]), and that the students performed consecutive interpreting in a shorter time in the En-Tr direction [M = 215.09, SD = 66.50] than in the Tr-En direction [M = 251.41, SD = 78.36]. Students need more time for consecutive interpreting in the Tr-En direction. This supports the view that they have more difficulty interpreting into a foreign language. However, there was no statistically significant relationship between consecutive interpreting durations in the En-Tr and Tr-En directions and the students' word span test scores and attention levels (monolingual and bilingual Stroop test). In other words, it can be said that the WM levels and attention skills of the students did not have a significant effect on their

interpreting durations. There is also no significant relationship between students' interpreting duration and the scores they received.

3.6 Analysis of interpreting errors and strategies

To mark the interpreting errors and interpreter's actions, which are considered both errors and strategies, the MAXQDA 2022 qualitative data analysis program was used. This program, one of the leading programs in qualitative data analysis, enables researchers to do coding and thematic analysis for massive data and categorise them systematically, which might be challenging or lead to loss of data if done manually. At the end of coding and categorising, the MAXQDA program helps researchers evaluate and interpret the results through visual tools and numbers. These encodings were later divided into the criteria of accuracy, TL quality, and delivery from Jieun Lieu's (2008) interpreting assessment scale.

3.6.1 Accuracy

3.6.1.1 En-Tr Direction

In the En-Tr direction, accuracy includes the following codes: omission, addition, inaccurate message, unfinished sentence, inaccurate tense, and unjustifiable change. The following is the code hierarchy from MAXQDA 2022.

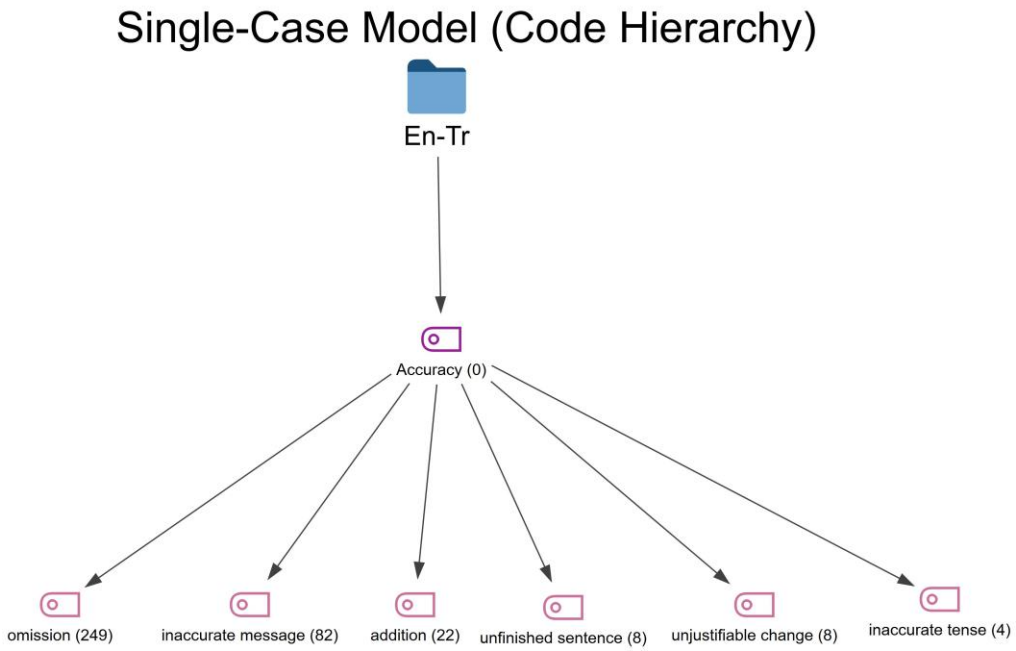

Diagram 1. Accuracy in the En-Tr Direction

First, it was observed that 32 students omitted a total of 249 messages because they could not interpret or forgot those messages. Students tended to omit messages with mostly numerical data, idiom-type messages, and expressions with proper nouns. For instance, 22 students were also found to have omitted the sentence "Fishing assures the livelihood of 1 in 10 of the world's people." It was observed that 23 students omitted the part "The ocean has warmed by 0.7 degrees celsius since the 19th century." Similarly, the phrase "our oceans are out of sight and out of mind" was also omitted by 4 students. In addition, 23

students omitted the statement "... in the Paris Climate Agreement, there is only one tiny reference made to our oceans and how they should be protected."

Second, 82 messages were coded as inaccurate message in MAXQDA. Students often mistranslated messages with numbers, messages with wordplays (planet earth-planet ocean), and messages about scientific phenomena, including words such as carbon dioxide, reef, global warming, etc.

Third, 22 messages were added to the target speech. It is observed that some of the students added comments such as "Bu da yeterli değil [This is not enough.-back translation from Tr to En]", "Ne kadar kısa sürede çözüm bulursak, o kadar iyi. [The sooner we find a solution, the better it will be.- back translation from Tr to En]" Although the source speech only mentions about oceans and seas, there are a few additions that seriously change the meaning, such as added words and phrases like lakes, the seas being a source of food for us, and the need for drinking water in places where fishing is mentioned.

Fourth, 8 unfinished messages were found. It is inferred that students could not remember the rest of the messages because they were not able to read their notes or did not write sufficient notes to remember, and therefore left the message unfinished.

Fifth, the students made 8 unjustifiable changes in the messages due to grammatical, lexical, or phonological problems. Some of the students made illogical errors, which resulted in inaccurate delivery of the messages. For instance, in the sentence "... if you look at it from space, they will see that there is much more water than there is land.", ”it” refers to “the world” and it has already been mentioned in the previous messages. However, one of the students interpreted it as "Uzayda topraktan çok su var. [There is more water than soil in space - back translation from Tr to En.]" and it is a serious and unreasonable deviation from the message as the student did not capture or they misunderstood the prepositional phrase. In another example, the expression "poorest people" is understood as "forest people" due to phonological similarity and some of the students interpreted it as “orman insanları- [forest people-back translation from Tr to En]”.

Finally, 4 incorrect tense usages are observed in students’ interpreting. 4 of the students interpreted the message "By 2050, some scientists believe that we will have no coral reef left in our oceans at all..." in the past tense, as they misunderstood the date as 2015. All these interpreting errors affect the accuracy of the message in TL.

3.6.1.2 Tr-En Direction

In accuracy criteria, the errors are omission, addition, inaccurate message, unfinished message, and inaccurate tense in the Tr-En direction. The code hierarchy extracted from MAXQDA 2022 is in Diagram 2.

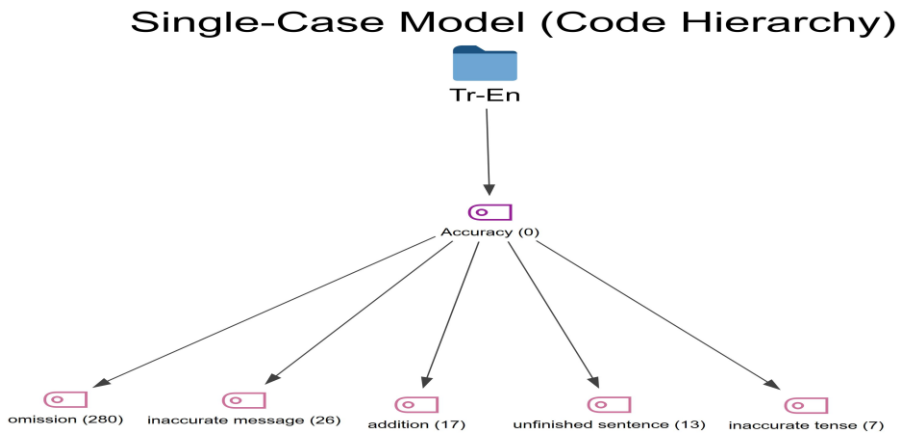

Diagram 2. Accuracy in the Tr-En Direction

It is observed that 32 students omitted a total of 280 messages from the source speech in the Tr to En direction. The students omitted mostly the messages including nouns and proper nouns, consecutively. For instance, students tended to omit the following messages completely or nouns in these messages, "In fields such as politics, economics, astronomy and geography, the ancestral knowledge and documents of the Chinese are extremely numerous and extremely comprehensive.", "There are countless large companies that want to invest in many sectors in China, including fields such as automotive, chemistry, IT.", "In addition to documents, it is also possible to visit many historical places such as the Great Wall of China, the Forbidden City." In addition, students omitted the repeated messages such as "Would you like to learn these things? If the answer is yes, then you will need to learn Chinese." since this message repeats in the speech several times.

Second, 32 students interpreted the messages inaccurately 26 times overall. Students predominantly misinterpreted the messages at the word level. Inaccuracy is observed in the messages in the word “Çin [China]” as “Japan” or "Chinese" and in interpreting “Yasak Şehir [Forbidden City]” as "Lost City" or "Forbidden Country".

Addition is observed 17 times overall. Most of the additions are expressions that do not affect the meaning of the message significantly and are the result of the explication of the message. To illustrate, in the message "The way we travel, the way we cook, the way we communicate, everything is changing," "everything is changing." is an addition that is not given in the source speech. Another example is "English is still considered an international language." followed by an addition like "... because English economy was powerful." Furthermore, it is observed that students added field names such as "history, medicine" to the source message "The language used in science, art, and literature was Latin." as the students probably forgot the nouns and they benefitted from their general world knowledge.

There were 13 unfinished messages. It is inferred that they could not finish messages either because they could not remember the verb or object or because they could not remember English equivalence.

Another error is using the incorrect tense 7 times. Some of the students used the future tense instead of the past, or the future tense instead of the present. In addition, some did not remember the form of the verb in the past tense, as in the example "Then English become popular, and it become international language." The students used the present tense instead of the past in the message about Latin language which was an archaic language as in the example "Although it is used in many fields such as science, art, literature..."

It is observed that omission is higher in the Tr-En direction. Furthermore, inaccurate messages are higher in the En-Tr direction. Unjustifiable changes are not observed in the Tr- En direction. In other words, directionality might create differences in accuracy, especially in terms of omissions, inaccurate messages, and unjustifiable changes. There is no statistically significant relationship between the students' WM and attention control skills and their errors and strategies in terms of accuracy.

3.6.2 Delivery

3.6.2.1 En-Tr Direction

The delivery errors in the En-Tr direction are also examined, and the errors from the most to the least consecutively are as follows: self-correction, pause, repetition, um voice, sigh, sniffle or cough, laughing voice, pronunciation error, and self-speaking. The code hierarchy extracted from MAXQDA 2022 is illustrated in Diagram 3.

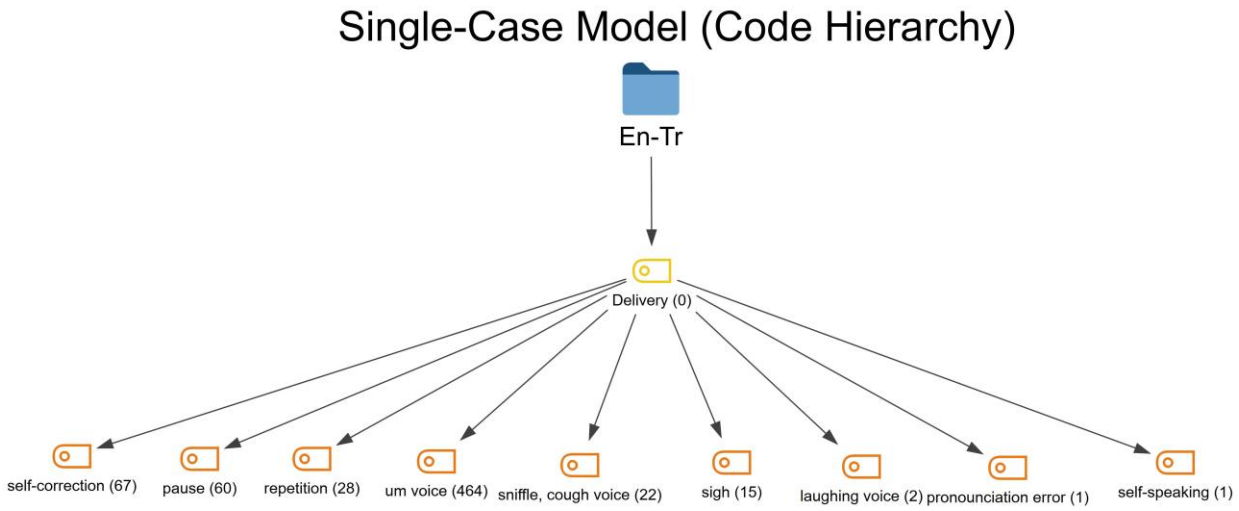

Diagram 3. Delivery in the En-Tr Direction

The most common error made by 32 students is um voice. It occurred 464 times, usually at the end of sentences or after the subject or verb. Thus, it suggests that students had difficulty reading their notes or recalling the next message, subject, and verb from memory. However, the repetition of this voice might be disturbing for listeners as it will affect fluency.

Second, 32 students corrected themselves a total of 67 times during interpreting. For instance, in the sentence "...Ancak okyanuslara... okyanuslar hakkında maalesef böyle kurallar yoktur. [However, unfortunately, there are no such rules to oceans... about the oceans.]", the student had difficulty in interpreting because of Turkish dative case suffix. In addition, in the sentence "...şahsi görüşüm bu teknolojik...teknolojinin kullanılmasından ziyade politik çözümler üretmek bence daha önemlidir. [My personal opinion is that it is more important to come up with political solutions than to use this technological... technology.", the student corrected themselves after they use derivational morpheme. Besides these errors, some students made self-corrections in their word choices. For instance, one of the students interpreted billion as million at first but later they corrected this error "...çünkü 3 milyon...3 milyar insanı besliyor. [... because 3 million... It feeds 3 billion people.]".

The third most encountered error is the pause, observed 60 times by 28 out of 32 students. 28 students paused during interpreting in the En-Tr direction. Another error is repetition made 28 times by 13 students. These repetitions were at the word, phrase or sentence level. Repeating the message can be used as fillers to save time to memorize the next message. Another error is the sound of sniffle and cough. These sounds were observed 22 times in the interpreting of 10 students. This kind of sounds are considered errors because they affect the fluency of speech. Likewise, sigh was observed 15 times. This was observed in the

interpreting of 7 students which might have occurred as a result of excitement or relief after achieving to interpret the message they could not remember at first.

The other error is the laughing voice and it was observed twice in the interpreting of 2 students. One of the students probably laughed at their own interpreting performance, namely word choice. For instance, the student interpreted the message in the En-Tr direction as "Bu durumda belki de dünyaya kara parçası değil de okyanusya veya denizya demeliyiz. [Thus, maybe we should call the world oceania or seaia, not the earth.", and most probably, he laughed the words he created instead of the phrases "planet ocean" and "planet sea" in the source speech. 1 student also made a pronunciation error. The student had difficulty in pronouncing the speaker's name (Joe). The other least made error is self-speaking of one student once in the course of interpreting. When interpreting, the student said "I did not understand the second one."

3.6.2.2 Tr-En Direction

When delivery errors in the Tr-En direction were analyzed, the errors observed the most to the least respectively; um voice, self-correction, pause, repetition, pronunciation error, laugh, sigh, sniffle or cough voice, and self-speaking. The code hierarchy extracted from MAXQDA 2022 is illustrated in diagram 4.

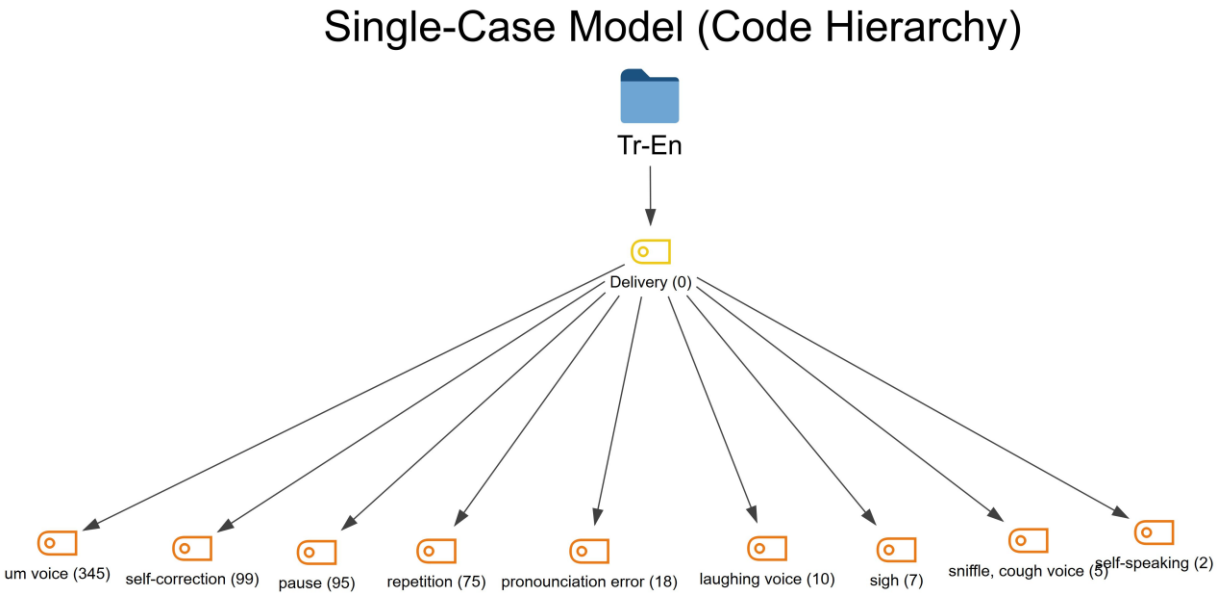

Diagram 4. Delivery in the Tr-En Direction

At the top of the errors, there is the um voice repeated 345 times. 4 out of 32 students did not sound this voice during interpreting. As in the En-Tr direction, it was observed that students made this sound more often at the end of the sentences or after the subject or verb. Compared to the En-Tr direction, it is understood that um voice is less observed in the Tr-En direction and fewer students made this voice.

Second, self-correction is an error and strategy that were noted 99 times in 27 students. Some of the students benefited from self-corrections, such as in the message, "... you will end up with a lot of work and job chances." to change word choices. In addition, one of them corrected themselves in the message "...people want to understand them... with those document, documents..." to correct error of singular-plural affixes. Compared to the En-Tr direction, students resort to self-correction more in the Tr-En direction. The third common error is pause, observed 95 times in 27 students. 5 students never paused during interpreting. Compared to the En-Tr direction, students pause more in the Tr-En direction. The fourth common error, which is also a strategy, is repetition. 7 students did not resort to repetition during interpreting. A total of

75 repetitions were observed at the word, phrase, or sentence level. It was observed that there were more repetitions in the Tr-En direction.

The fifth error is the pronunciation error observed 18 times by 13 students. Students had difficulty in pronunciation of the words like "foreign", "culture", "hear", "job", "paper" in TL. There were more errors in pronunciation in the Tr-En direction. The sixth error is laughing voice, which is observed 10 times by 8 students. It is understood that the students laughed when interpreting the message "If your answer is yes, you should learn Chinese.", which is repeated by the speaker many times. As this message is repeated at the end of the three messages, it is inferred that the students laughed at the message. It can be concluded that more students made this error in the Tr-En direction.

The seventh is sigh, which is observed 7 times. Sigh is less common in the Tr-En direction. The eighth is the sounds of sniffle and coughing. They were observed less frequently in the Tr-En direction. The ninth common error is self-speaking, observed once in 2 students. A student couldn't remember the English equivalence of a word and said, "Yararlanmak neydi? [What is the benefit?]" The other student said, "How should I put it?" in the message "... the language, kind of sounds, how should I put it, kind of sounds strong..." when trying to remember the word. There is no difference in this error in terms of directionality.

3.6.3 Target Language Quality

3.6.3.1 En-Tr Direction

When TL quality errors in the En-Tr direction is examined, case-suffix error, interference of source language, genitive suffix error, missing indirect object, wrong singular-plural noun usage, and inaccurate conjunction were observed respectively from the most common errors to the least ones. The code hierarchy extracted from MAXQDA 2022 is in Diagram 5.

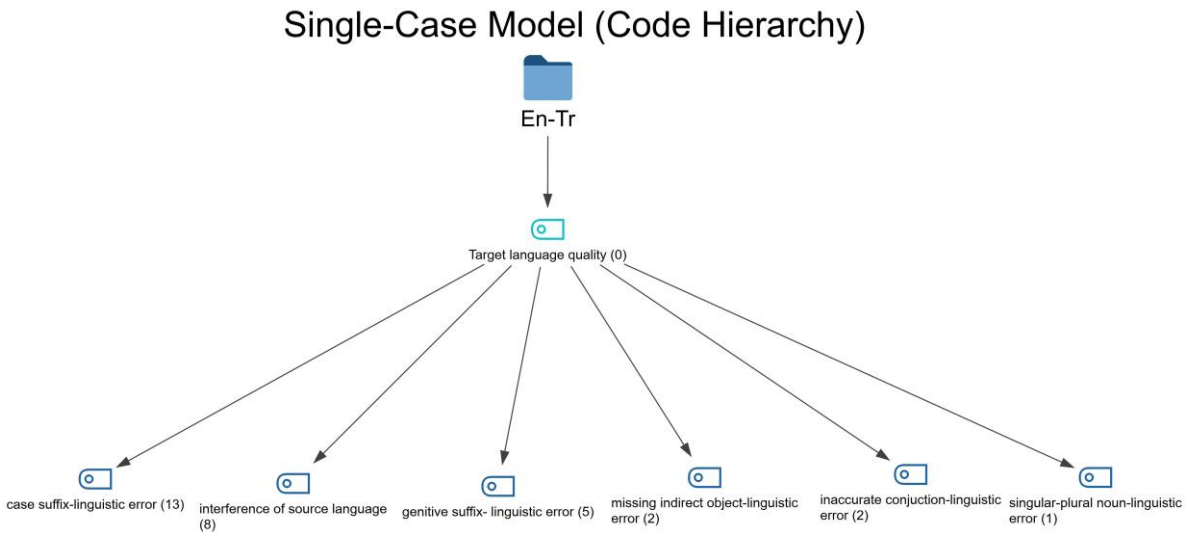

Diagram 5. TL Quality in the En-Tr Direction

The most common error is the incorrect use or lack of case suffixes. For instance, case suffixes were not used, or -i case suffix was used instead of the -e case suffix in Turkish. The examples are "...biz *onu* hiçbir şey olmaz diye düşünüyoruz.... [we *think it* will be nothing.], "...ve *dünyayı* aslında yani İngilizce anlamıyla toprak demek çok da mantıklı gelmiyor. [...and it doesn't make much sense to call the world as the earth actually, in English.]", and "Neden bu *okyanuslarımız* yok etmeye izin veriyoruz? [Why are we allowing *to*

destroy our oceans?]" It can be inferred that this error results from the difference between languages and that students consider English grammar rules when interpreting into Turkish.

Second, interference of the source language at the word and sentence level was observed a total of 8 times in 7 students' interpreting. For instance, a student interpreted the message as "Politikal yöntemler de gereklidir. [Political methods are also necessary.]", and used "politikal" instead of "politik," which is the correct version in Turkish. A student interpreted the messsage as "Drone ile onları gözlemleyebilir, monitörleyebiliriz. [We can observe and monitor them with a drone.", and used "monitor" as a verb, which is not used in Turkish.

Third, the inaccurate usage of genitive suffixes was observed once in 5 students. Either genitive suffix was not used, or another suffix was used instead. For instance, "dünyamıza [to our world]" instead of "dünyamızın [our world] "was used in the message "Biz dünyamıza aslında ismini yanlış söylüyoruz. [We actually call the name of our world incorrectly.]" and, genitive suffix was used incorrectly. Another example is the use of the word "insanlar [people]" instead of "insanların [people's]" in the message "İnsanlar yaşamak için suya ihtiyaçları var. [People need water to live.]". Fourth, a missing indirect object was observed once in 2 students. In the message "Uluslararası baktığımızda birçok, birçok konuyla alakalı yasalar vardır. [When we look internationally, there are laws that are related to many many subjects.]", the missing indirect object after the verb "look" results in ambiguity. Fifth, the use of incorrect conjunctions was observed once in 2 students. The conjunction "fakat [but]" was both used to connect two sentences that do not indicate contrast, and after the conjunction "bu yüzden [thus]" in the message "Bunun için denizler ve okyanuslar gözümüzde ve aklımızda olmuyor. fakat bu yüzden çok da önemsemiyoruz. [That's why the seas and oceans are not in our scope of eyes and minds, but thus we don't care so much.]".

The last error is the incorrect usage of the singular-plural noun, observed once in 1 student. "3 milyon insanlar [3 million people]" was used instead of "3 milyon insan [3 million person]" in the message "It is source of food for approximately 3 million people.", and it is an error in the target language as plural noun is not used with numbers in Turkish.

3.6.3.2 Tr-En Direction

When TL quality errors in the Tr-En direction is examined, errors in the usage of singular-plural noun, changing sentence structure, word choice error, auxiliary verb usage error, syntax error, tense suffix error, active-passive voice error, missing of subject, preposition error, article error, interference of source language at word and sentence level, gerund-infinitive error, prefix error, and missing object. The code hierarchy extracted from MAXQDA 2022 is illustrated in diagram 6.

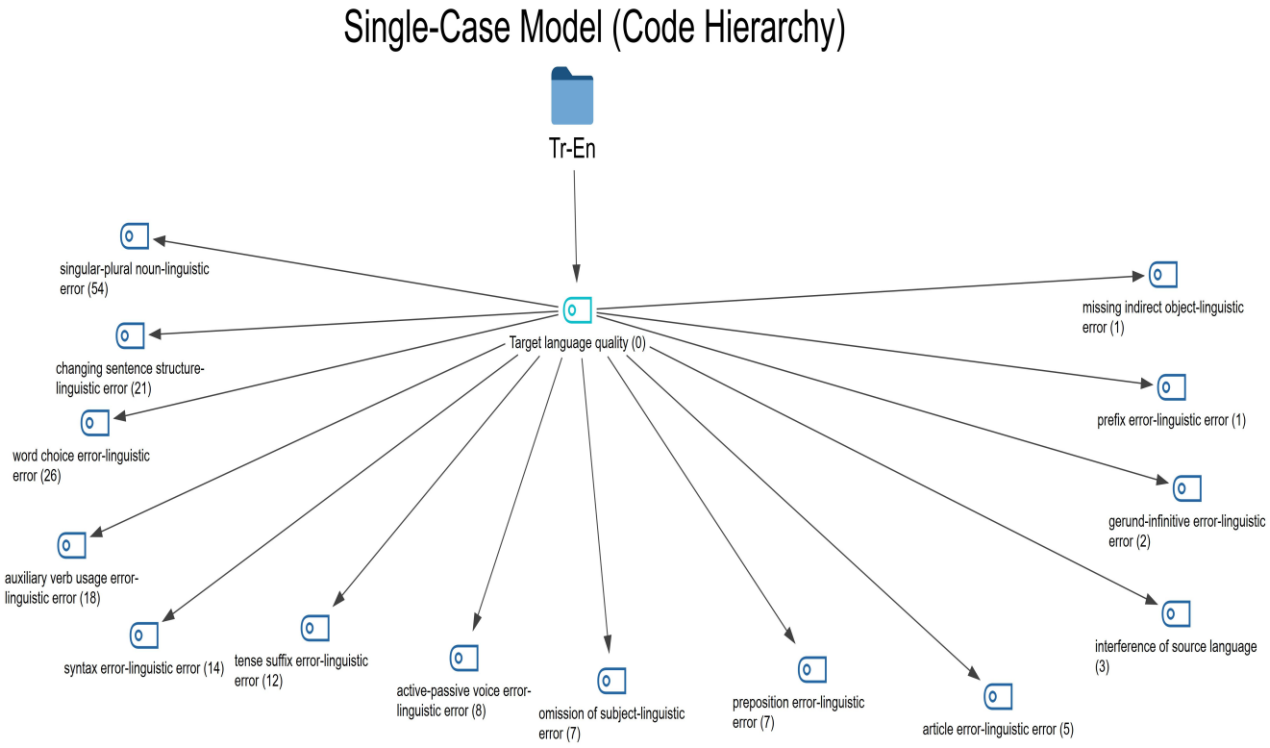

Diagram 6. TL Quality in the Tr-En Direction

The most common error is the error in singular-plural usage. 19 students made a total of 54 errors in the usage of singular-plural noun. For instance, one of the students used singular auxiliary verb for plural from of the word as in ".... there is a lot of documents and information in China". In addition, one of the students used plural noun after the word “every” in the message "... every cultures change." Another example is the usage of singular auxiliary verb after the plural noun in the message ".... the explanations about historical places is Chinese." It can be concluded that students make these errors due to reasons such as not having a sufficient command of the target language and the immediacy of interpreting.

Second, the error of changing the structure of the sentence was observed 21 times in 15 students. The students made this error by changing the question sentences to "if clause". For instance, some of the students interpreted the message "Siz de bu belge ve bilgileri araştırmak ister miydiniz? Cevabınız evetse o zaman Çince öğrenmeniz gerekecek. [Would you like to investigate these documents and information? If the answer is yes, then you will need to learn Chinese.]" as "If you want to do research about that field I mentioned before, you can learn Chinese." Considering the example, it may not be an error semantically, but the interpreter changed the speaker’s style, by turning the question form into an if clause.

The wrong word choice was observed 28 times in 16 students. For instance, one student used "In terms of" instead of "as" in the expression “... if you want to go there in terms of being a tourist...". Another example

is the use of "where" instead of "places" in the expression "There are lots of where to visit and with those ruins.". In addition, some of the students used adjectives instead of nouns (politics, economy, astronomy) in the expression "There are many documents that carries very important information in every field, for example, political, economic, astronomic."

Errors in the use of auxiliary verbs were observed 18 times in 6 students. These errors generally result from the inaccurate use of auxiliary verbs in terms of singularity-plurality, not using any auxiliary verbs or using an auxiliary verb that can be used before the verb. One of the examples is the use of "is" that cannot be used in the expression "Chinese is became a shining star of the languages.".

Syntax error was observed 14 times in 8 students. For instance, the word "language" should come after the word "Latin" or not at all, but the student used it before the word "Latin" in the expression "... language Latin was very common." Another example is that the auxiliary verb "was" was used before the pronoun "it" in the expression "We knew was it this historical places... those historical places." They may have been made because of the students' proficiency in L2 or immediacy of interpreting.

Errors in the tense suffix were made 12 times by 8 students. There is no suffix that needs to be added to the verb for the present perfect in the message "Have you notice that in crowd place that you heard some languages that you don't know?" Also, the incorrect suffix was used instead of the -ing suffix that must be added to the verb in the statement "If you were explains that foreign people speaking in their language..." Students may have made these errors due to the proficiency in L2 and immediacy of interpreting.

Active-passive voice error was observed 8 times in 6 students. One of the students used the verb "understand" in active voice instead of passive in the statement "... these papers are not getting understand well enough.". 5 students interpreted some statements without using the subjects. The pronoun "it" which must come after the conjunction was lacking in the message "Chinese is a shining star because is economic center.". Preposition error was observed a total of 7 times in 4 students' interpreting. Students either did not use prepositions at all, as in the message "Chinese now every field", or used an incorrect preposition as in the message "... made from China". Error in article usage was observed in 5 students. Students had difficulty in using "a/an" in the Tr-En direction. Students either used "a/an" before uncountable words or used a plural word after "a/an" as in the example "... we basically witnessing a Chinese in every perspective that's happening in the industries.".

Similarity to the source language at the word and sentence level was observed once in 3 students. The students used Turkish words instead of English words when they could not remember the equivalence. The student used the phrase "Çin Malı [Made in China]" instead of "Chinese product." in the message "That's why we all, we hear the Çin Malı words in every field." When compared to the similar errors in the En-Tr direction, the students used more expressions and structures similar to the source language in the Tr-En direction. The gerund-infinitive error was observed in 2 students. One of the students used "verb+ ing" after "-continue" instead of "to + verb" in the message "I'm continue telling you" in addition to the tense suffix error.1 student made an error in the use of the prefix. The student used "not touched" instead of "untouched" and "not changed" instead of "unchanged" in the message "...there are thousands of not touched, not changed documents from decades ago.". Missing object was observed in 1 student. The student did not use any noun object after adjectives in the message "Learning Chinese has useful sides like political, astronomical and geographical."

4. DISCUSSION and CONCLUSION

Interpreting is needed in various meetings such as conferences, public spheres, business meetings and diplomatic negotiations, however, the number of trained interpreters both in Türkiye and in the world is limited (Gile, 2009). The reason of this is most probably that interpreting is relatively more challenging than translation. Considering the typological differences of Turkish and English, spending too much effort in the listening phase between this language pair may also affect the process of interpreting. In this study, it was found that the students were much more successful in the En-Tr direction. Although there are not sufficient

relevant studies on consecutive interpreting, it was observed that students were found successful or unsuccessful in various aspects in interpreting to L2 in the studies conducted with different language pairs. For instance, in the study conducted by Lee Yun Hyang (2003) on Korean and English language pairs, it was found that students were less successful in simultaneous interpreting to L2, while in the study conducted by Färber (2002) on German and English language pairs, it was found that students were more successful in terms of accuracy and completeness in simultaneous interpreting to L2. It can be concluded that these differences may be related to the language pair under investigation and the competencies of the participants. In fact, in the present study, it was found that the students were more successful in the En-Tr direction, and they had more difficulty in the Tr-En direction, and this mainly resulted from the lack of vocabulary knowledge in L2 and the problems in grammatical structures. As Chen (2020) pointed out, it can be asserted that the cognitive load is less in interpreting from L2 to L1. However, from L1 to L2, it was not observed that students performed better in terms of overall interpreting performance in this study.

Considering the relationship between students' WM levels and interpreting performance, a significant relationship was found, parallel with the statement by Cai et al. (2015). However, in the study, this relationship is observed in the En-Tr direction. More precisely, it was found that the participants with higher WM levels had higher performance scores in the En-Tr direction. However, there is no relationship between these factors in the Tr-En direction. This is related to the students' L2 proficiency, note-taking techniques and the interpreting techniques. When students' interpreting performance were examined according to the three criteria (accuracy, TL quality, delivery) and individual factors, it was found that there is a significant relationship only between the memory level and the TL quality in the En-Tr direction. Thus, it was determined that the students with high levels of WM had better TL quality scores. It may also be concluded that students with higher level of WM make fewer delivery errors (e.g., self-correction, um voice, pause, etc.).

The analysis of students' note-taking activities showed that they predominantly took notes in the language of the message, usually writing down the main idea, keywords, and numbers, but a few students tried to take notes on everything possible, and nearly half of them stated that they had problems interpreting by making use of the notes since they could not read abbreviations or writings. Although some students used a note-taking strategy, the general tendency was to take notes without any strategies. There was no statistically significant relationship between the data on students' note-taking in En-Tr and Tr-En and word span or digit span test scores and attention levels (i.e. the Stroop test). The duration of students' interpreting was also examined in terms of directionality. There was a significant relationship between the duration of interpreting and directionality and it shows that students spent more time interpreting in the Tr-En direction. It can be said that they put more effort into interpreting to L2 than they do with L1. Nevertheless, it can be inferred that the duration of consecutive interpreting did not have a significant relationship with students' WM capacity and attention control skills. There was also no significant relationship between the duration of interpreting and students' interpreting performance scores.

Interpreting errors, some of which are both errors and strategies, in the transcriptions of the students' consecutive interpreting were coded in the MAXQDA 2022. These coded data were later divided into the categories of accuracy, delivery and TL quality from Jieun Lieu's (2008) interpreting assessment criteria. The most common errors were omission, inaccurate message, addition, self-correction, pause, um voice, repetition, pronunciation errors, incorrect use or non-use of the case suffix, interference of the source language, errors at the word and sentence level in singular-plural usage, and syntax errors. It was observed that the students paused more and repeated more messages, and they had more omissions and self-corrections in the Tr-En direction, whereas they used more um voice in the En-Tr direction. The difference in the errors made by the students in terms of TL quality is due to the difference in the typological structure of the language pair. While students made the most case errors in the En-Tr direction, they made the most singular-plural usage errors in the Tr-En direction. However, the students' errors and strategies did not have a significant relationship between their WM levels and attention control skills.

In a nutshell, this study is focused on the difficulties encountered and the coping strategies in consecutive interpreting in the English and Turkish language pair by the students studying at Departments of English Translation and Interpreting. Within the scope of the study, directionality and individual differences (WM and attention control skills) on students' interpreting performance were examined. As a result, it was observed that students with higher WM levels had significantly better interpreting performance especially when interpreting in the En-Tr direction. The same result was not observed in the Tr-En direction because of delay in decision-making and students language proficiency in L2. Students spent more time in the Tr-En direction and stated that although they consider the speech in Turkish fluent and understandable, they had more difficulty in consecutive interpreting. In the study, there was no significant relationship between the attention control skills of the students and their interpreting performance. There was no significant relationship between the students' preferences related to note-taking and directionality. The data obtained revealed that there is a significant difference in the errors made and self-corrections made by the participants in terms of directionality. It was observed that the participants made the most errors in the En-Tr direction and that they had difficulty in using case suffixes due to structural differences between the two languages. The students heavily relied on the structure of the source language while interpreting. This study suggests important implications, especially for the restructuring of consecutive interpreting courses in the curriculum of the Departments of English Translation and Interpreting. To this end, it was found that the awareness levels of the students about the language-specific rules should be increased by preventing their tendencies toward word-for-word translation in interpreting from L2 to L1 by focusing on the comparative studies on Turkish and English language structure. In Türkiye, it is observed that the density of courses related to linguistics in the current curricula in the Department of English Translation and Interpreting is not sufficient and that they are not focused on translation and comparative linguistics. As Durukan (2016) pointed out, especially students might have a tendency to be source-oriented and perform word-for-word translation, thus comparative grammar might contribute to the improvement of language awareness and interpreting skills. In the literature, it is stated that when interpreting from L1 to L2, interpreting students are more likely to have production-related (grammar, etc.) errors and this is due to less competence in L2 (Chou, Liu & Zhao, 2021). However, contrary to the Western view that interpreting is better performed to L1, it is known that interpreting to L2 is also demanded and widely performed in the market (Gile, 2009; Pavlović, 2007).

When the results of this study are considered in the context of interpreter training, it is understood that the errors at the level of TL quality (e.g., singular-plural use, incorrect auxiliary verb use, word choice, and preposition use, and errors in gerund-infinitive use) result from low level of competence in L2 and typological differences between languages. In addition, it is found that cognitive load results in some errors in delivery (e.g., um voices, pauses, etc.) and in the level of accuracy (omission, etc.). There are few interpreting courses in English Translation and Interpreting Programs at the undergraduate level, and although students interpret to L2, there is a tendency to perform interpreting mainly to L1 according to the common Western point of view. Bayraktar Özer (2022) stated in her study that lecturers who teach interpreting in Türkiye consider L1 and L2 competences of the students as the most important skill, but they do not consider it an outcome of the interpreting course due to limited class hours (p. 215-216). For this reason, various suggestions for curriculum should be considered to ensure the improvement of students' competence. Considering the current conditions of students at English Translation and Interpreting programs, especially those that do not have a separate interpreting course from L1 to L2, one may open one for the Tr-En direction or the density of the interpreting practices may be increased. Students should be given feedback on the common errors in the Tr-En direction by teaching interpreting strategies for reducing the cognitive load, and self-assessment. The acquisition of skills and strategies for competence in L2 and reducing the cognitive load should be considered an outcome of this course. It is expected that this study will contribute to understanding the process of interpreting in terms of directionality between two typologically different languages, revealing the main difficulties encountered, and to interpreter training.

Reference

Baddeley, A., & Hitch, G. (1974). Working memory. *Psycholology of Learning and Motivation*, *8*, 47-89.

Başer Z. (2021). Translation and interpreting from a psycholinguistic perspective. In Çetiner, C. ve Kuleli, M. (Eds.), *Çevirmen eğitiminde güncel yaklaşımlar ve uygulamalar (Current approaches and practices in translator and interpreter training).* Ankara: Nobel Yayınları.

Bayraktar Özer, Ö. (2022). *Current Pedagogical Tendencies and Practices in Interpreter Training: A Study on Turkey*. [Doktora Tezi], Hacı Bayram Veli University, Ankara.

Bros-Brann, E. (1976). Critical comments on H.C. Barik's article "Interpreters Talk a Lot, Among Other Things", *AIIC Bulletin*, *4*(1), 16-18.

Cai, R. Dong, Y., Zhao, N., & Lin, Y. Lin. (2015). Factors contributing to individual differences in the development of consecutive interpreting competence for beginner student interpreters. *The Interpreter and Translator Trainer*, *9*(1), 104-120. https://doi.org/10.1080/1750399X.2015.1016279

Chang, C. C., & Schallert, D.L. (2007). The impact of directionality on Chinese / English simultaneous interpreting. *Interpreting*, *9*(2), 137-176. https://doi.org/10.1075/intp.9.2.02cha

Chou, I., Liu, K., & Zhao, N. (2021). Effects of directionality on interpreting performance: evidence from interpreting between Chinese and English by trainee interpreters. *Frontiers in Psychology*, *12*, 1-11. Doi: 10.3389/fpsyg.2021.781610

Çince Öğrenmek. EU Speech Repository. Retrieved from 01.04.2022https://webgate.ec.europa.eu/sr/speech/%C3%A7ince-%C3%B6%C4%9Frenmek

Daneman, M., & Carpenter, P. (1980). Individual differences in working memory and reading. *J. Verbal Learn. Verbal Behav, 19*(4), 450--466. https://doi.org/10.1016/S0022-5371(80)90312-6

Denissenko, J. (1989). *Communicative and interpretative linguistics. The theoretical and practical aspects of teaching conference interpretation*. Eds: L. Gran, L. & Dodds, J. Udine: Campanotto Editore.

Digit Span. Cambridge Brain Sciences. Retrieved 01.04.2022 from https://www.cambridgebrainsciences.com/science/tasks/digit-span

Doğan, A. (2012). Andaş çeviriye Anokhin'in İşlevsel Sistem Kuramı ve Chernov'un Etkinlik Kuramı kapsamında yaklaşım, *Ankara Dil ve Tarih Coğrafya Fakültesi Dergisi*, *52*(1), 113-132.

Durukan, E. (2016). Çeviri odaklı karşılaştırmalı dilbilgisinin temel çeviri becerisi edinimindeki önemi. *Dil Eğitimi ve Araştırmaları Dergisi*, *2*(2), 41-52.

Färber, B. (2002). *Anticipation in German-English Simultaneous Interpreting,* [Unpublished Master's Thesis], Karl-Franzens Universität Graz.

Gile, D. (2005). Directionality in conference interpreting: A cognitive view. *Communication & cognition. Monographies*, *38*(1-2), 9-26.

Gile, D. (2009). *Basic concepts and models for interpreter and translator training.* (2nd Edition). Amsterdam/Philadelphia: John Benjamins Publishing Company.

Juffs, A., & Harrington, M. (2011). Aspects of working memory in L2 learning, *Lang. Teach*., *44*(2), 137-166.

Köpke, B., & Nespoulous, J. L. (2006). Working memory performance in expert and novice interpreters. *Interpreting*, *8*(1), 1-23. https://doi.org/10.1075/intp.8.1.02kop

Lee, J. (2008). Rating scales for interpreting performance assessment. *The Interpreter and Translator Trainer*, *2*(2), 165-184. https://doi.org/10.1080/1750399X.2008.10798772

Lee, Y.-H. (2003). *Comparison of Error Frequency in Simultaneous Interpretation A to B and B to A (Korean-English).* [Unpublished DEA Pre-doctoral Thesis]. University of Geneva.

Oceans and Seas. EU Speech Repository. Retrieved 01.04.2022 from https://webgate.ec.europa.eu/sr/speech/oceans-and-seas

Öztürk, A. (2020). The effect of directionality on performance and strategy use in simultaneous interpreting: A case of English-Turkish language pair. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, *18*, 639-665. https://doi.org/10.29000/rumelide.706444

Öztürk, A. (2012). *Directionality simultaneous interpreting: English Turkish language pair*. [Unpublished Master's Thesis]. Hacettepe University.

Pavlović, N. (2007). Directionality in Translation and Interpreting Practice: Report on a Questionnaire Survey in Croatia. *International Journal of Interpretation and Translation, 5*, 79–100. https://doi.org/ 10.1075/forum.5.2.05pav

Pöchhacker, F. (2016). *Introducing interpreting studies* (2nd Edition). New York: Routledge.

Preston, M.S., & Lambert, W.E. (1969). Interlingual interference in a bilingual version of the Stroop color-word task. *Journal of Verbal Learning and Verbal Behavior*, *8*(2), 295-301. https://doi.org/10.1016/S0022-5371(69)80079-4

Scarpina, F., & Tagini, S. (2017). The stroop color and word test. *Frontiers in psychology*, *8*, 557. https://doi.org/10.3389/fpsyg.2017.00557

Setton, R., & Dawrant, A. (2016). *Conference interpreting–A complete course*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Tommola, J. & Heleva, M. (1998). Language direction and source text complexity effects on trainee performance in simultaneous interpreting. In Bowker, L., Cronin, M., Kenny, D. & Pearson (Eds.), *Unity in diversity*. J. Manchester: St. Jerome.

Ünal, G. 2008. *Release from proactive interference and its relations to executive functions: A developmental study on Turkish children*. [Unpublished Master's Thesis]. Middle East Technical University.

Whyatt, B. (2018) Old habits die hard: Towards understanding L2 translation. *Między Oryginałem a Przekładem, 41*. 89–112. https://doi.org/10.12797/MOaP.24. 2018.41.05.

Yemenici, A. (2019). Ardıl çeviri eğitiminde dikkat yönetimi ve çalışma belleği dinamikleri. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, (Ö5), 297-313. https: doi.org/10.29000/rumelide.606163

UZUN ÖZET

1. GİRİŞ

Sözlü çeviri, yapılış şekline göre (modality) 4 başlık altında incelenmektedir (Pöchacker, 2016, s.18-20). Bunlar; ardıl, andaş, fısıltı ve yazılı metinden sözlü çeviridir. En yaygın kullanılan sözlü çeviri türlerinin ise ardıl ve andaş çeviri olduğu bilinmektedir. Sözlü çevirinin genel zorlukları arasında; (i) doğası gereği konuşmanın çok kısa süre içerisinde bellek ve/veya notlar yardımıyla çevirisinin yapılması gerekmesi, (ii) konu ile ilgili çeviri esnasında araştırma yapmaya imkan olmaması, ve (iii) andaş çeviri için girdi ve çıktının eş zamanlı gerçekleşmenin gerekmesi, bu nedenle bilişsel yük oluşması ve ardıl çeviride de dinleme esnasında girdinin bellekte tutulabilmesi, not alma ve dinleme için gerekli bilişsel çabanın dengeli olarak dağılmasının gerekmesi sayılabilir (Gile, 2009).

Çevirinin yönü de sözlü çeviri (andaş ya da ardıl) sürecinde etkin rol oynamaktadır. Alanyazında bahsedildiği üzere, iki farklı görüş vardır. Birincisi, sözlü çevirinin en doğru şekilde yabancı dilden ana dile doğru yapılabileceği yönündedir (Bros-Brann, 1976). Diğeri ise, kişinin ana dilindeki konuşmayı daha iyi anlayacağı için daha iyi çevireceği görüşüdür (Denissenko, 1979). Uzun yıllar boyunca, yaygın görüş ana dilden yabancı dile yapılan çevirinin daha zorlayıcı olduğunu ve uzun sürdüğünü belirtmektedir. Çevirinin yönü nedeniyle çevirmenlerin bir mesajı ana dile ya da ana dilden çevirirken farklı stratejiler kullanmaları gerekebileceği açıktır. Ancak son ampirik çalışmalar bu süreçte farklı faktörlerin de etkisi olabileceğini göstermektedir (Whyatt, 2018). Örneğin, sözlü çevirinin gerektirdiği bilişsel yetkinlikler nedeniyle, özellikle bellek ve dikkat kapasitesi gibi bireysel farklılıklar ve dil çiftlerinin (örn. İngilizce ve Türkçe) sürece etkileri dikkat çekmektedir (Gile, 2005).

İngilizce-Türkçe dil çiftinde, tipolojik farklılıklar nedeniyle sözlü çeviride karşılaşılan çeviri yönü kaynaklı sorunlar da bu faktörler arasında yer almaktadır. Bu nedenle, bu çalışmada İngilizce Mütercim-Tercümanlık bölümünde ardıl çeviri dersi alan son sınıf öğrencilerinin ardıl çeviri performansları (çeviri puanları), çevirinin yönü (İngilizce-Türkçe, Türkçe-İngilizce) ve bireysel farklılıklar (işleyen bellek ve dikkat seviyesi) arasındaki ilişki incelenmesi amaçlanmaktadır.

2. YÖNTEM

Sözlü çeviri sürecinde İng-Tr ve Tr-İng çeviri sırasında karşılaşılan zorlukların, bireysel farklılıkların etkilerinin, kullanılan çeviri stratejilerinin anlaşılmasını sağlamak için, EU Speech Repository veri tabanından seçilen "Çince Öğrenmek" başlıklı Türkçe bir konuşmanın İngilizceye ve "Oceans and Seas" başlıklı İngilizce konuşmanın Türkçeye ardıl tercüme yapılması istenmiştir.

İlk aşamada katılımcıların işleyen bellek kapasitelerini test etmek için, Rakam Aralığı Testi, ve sesbilimsel işleyen bellek testi olarak kullanılan Kelime Aralığı Testi kullanılmıştır. Ayrıca Stroop Task kullanılarak katılımcıların dikkat seviyeleri/odaklanma kabiliyetini test edilmiştir. İkinci aşamada, ğrencilerin İng-Tr ve Tr-İng ardıl çeviri yapmaları istenmiş ve ses kayıtları alınmıştır. Çevirilerinin transkripsiyonu çıkarılmıştır. Bu çeviriler Lee'nin geliştirdiği (2008) ardıl çeviri değerlendirme ölçütü aracılığıyla iki tarafsız değerlendirici tarafından puanlandırılmıştır. Üçüncü aşamada öğrencilerden çeviri sonrası geçmişe dönük düşünme tekniği ile değerlendirme yapmaları istenmiştir. Değerlendirme kısmında katılımcıların işleyen bellek kapasiteleri ve dikkat seviyeleri testlerinden aldıkları puanlar ile çeviri puanları arasındaki ilişki nicel olarak değerlendirilmiştir. Ayrıca öğrencilerin geçmişe dönük düşünme ile belirttikleri açıklamaları, çeviri esnasında aldıkları notları, çeviri süreleri, nicel verileri anlamlandırmak için kullanılmıştır.

Kırıkkale Üniversitesi, İnsan ve Toplum Bilimleri Fakültesi, İngilizce Mütercim-Tercümanlık Anabilim Dalında 4. sınıfta öğrenim gören 32 öğrenci çalışmada yer almıştır. Öğrenciler ardıl çeviri dersinin yanı

sıra, ön koşul olarak İngilizce konuşma, iletişim becerileri, sözlü çeviriye giriş, not alma teknikleri ve yazılı metinden sözlü çeviri derslerini başarıyla tamamlamışlardır.

3. BULGULAR, TARTIŞMA VE SONUÇLAR

Türkçe ve İngilizce dil çiftinde yapılan ardıl çevirilerde dinleme aşamasında fazla çaba harcamanın çeviriyi etkileyebileceği düşünülmüştür. Ardıl çeviri süreçleri incelendiği öğrencilerin yabancı dilden ana dile doğru yaptıkları çevirilerde çok daha başarılı oldukları görülmüştür. Ardıl çeviri ile ilgili yeterli çalışma bulunmasa da farklı dillerle yapılan çalışmalarda yabancı dile doğru yapılan andaş çevirilerde öğrencilerin farklı konularda daha zayıf ya da daha başarılı olduğu görülmüştür. Bu farklılıkların, dil çifti ve katılımcıların dildeki yetkinlikleriyle ilgili olduğu söylenebilir.

Öğrencilerin işleyen bellek seviyeleri ve çeviri performansları arasındaki ilişkiye bakıldığında Cai ve ark. (2015) tarafından belirtildiği gibi anlamlı bir ilişki gözlemlenmiştir. Mevcut çalışmada bu etki özellikle İng-Tr yönünde ortaya çıkmaktadır. Buna göre daha yüksek işleyen bellek seviyesine sahip katılımcıların İng-Tr puanlarının daha yüksek olduğu görülmüştür. Aynı ilişki Tr-İng yönünde gözlemlenmemiştir. Bu durum, öğrencilerin başta yabancı dil yeterlilikleri olmak üzere, not alma teknikleri ve kullandıkları çeviri yöntemleri ile ilgilidir. Çeviri performanslarının detaylarına (doğruluk, erek dil kalitesi, konuşma tarzı) bakıldığında sadece İng-Tr yönünde işleyen bellek seviyesinin erek dil kalitesi üzerine anlamlı bir etkiye sahip olduğu görülmüştür. İşleyen bellek seviyesi yüksek olan öğrencilerin erek dil kalitesi puanlarının da daha iyi olduğu belirlenmiştir. Ayrıca işleyen bellek seviyesi yüksek öğrencilerin daha az konuşma tarzı hatası (örn. kendi kendini düzeltme, e/ı sesleri, duraklama, vs.) yaptığı söylenebilir.

Öğrencilerin not almalarına ilişkin veriler, ağırlıklı olarak mesajın dilinde not aldıklarını, genelde ana fikir, anahtar kelimeler ve sayıları not aldıklarını, yarıya yakınının aldıkları notlarda kısaltmaları ya da yazılarını okuyamadığı için notlardan faydalanarak çeviri üretme aşamasında sorun yaşadığını göstermiştir. Bir kısmı not alma stratejisi kullansa da genel eğilim belirli bir strateji kullanmadan not alma yönündedir. Not almaya ilişkin veriler ile kelime aralığı ve dikkat seviyeleri testleri arasında anlamlı bir ilişki görülmemiştir.

Çalışmaya katılan öğrencilerin İng-Tr ve Tr-İng yönünde ardıl çeviri sürelerine bakılmıştır. Öğrencilerin Tr-İng yönüne çeviri yaparken daha çok zaman harcadığı yönünde anlamlı bir istatistiki veri elde edilmiştir. Ancak öğrencilerin işleyen bellek puanlarının ve dikkat /odaklanma becerilerinin çeviri sürelerine anlamlı bir etkisi bulunmamaktadır.

Ardıl çevirilerin transkripsiyonlarında çeviri hataları ve çevirmen eylemleri kodlanmıştır. Bu kodlamalar Jieun Lieu'nun (2008) çeviri değerlendirme kriterlerinden doğruluk, konuşmayı sunuş şekli ve erek dil kalitesi kategorilerine ayrılmıştır. En çok yapılan hatalar çıkarma, yanlış mesaj, ekleme, kendi kendini düzeltme, duraklama, ı, e sesleri çıkarma, tekrar, telaffuz hataları, durum hal ekinin yanlış kullanımı ya da kullanılmaması, erek dilde olmayan ve kaynak dile benzer kelime ya da yapıların kullanımı, tekil-çoğul kullanımında kelime ve cümle düzeyinde hatalar, sözdizim hataları en çok karşılaşılan hatalardır. Öğrencilerin çıkarma işlemini ve kendini düzeltmeyi İngilizceye çeviride daha çok yaptığı, daha çok duraklayıp daha çok mesajı tekrar ettiği, Türkçeye çeviride de daha çok e/ı sesleri çıkardıkları gözlemlenmiştir. Erek dil kalitesi düzeyinde yapılan hataların farklılığı dil çiftinin tipolojik yapısının farklılığından kaynaklanmaktadır. Türkçeye çeviride en çok durum hal eki hatası yapılırken, İngilizceye çeviride en çok tekil-çoğul kullanımı hatası yapmıştır. İşleyen bellek puanlarının ve dikkat becerilerinin çeviri hataları/stratejiler üzerinde etkisi olduğuna ilişkin istatistik olarak anlamlı bir sonuç çıkmamıştır.

ETHICAL APPROVAL OF THE RESEARCH

In this study, all the rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", were performed.

Ethics committee permission information

Name of the ethical review board: Kırıkkale University Social Sciences and Humanities Research Ethics Committee

Date of ethical assessment decision: 18.10.2021

Number of the ethical assessment certificate: 10

CONTRIBUTION RATE OF RESEARCHERS

The contribution of the 1st author to the research is 51% and the contribution of the 2nd author to the research is 49%. In addition, clearly state which researcher contributed to which stages of the research. For example

Author 1: Designing the research, determining the method, quantitative data analysis, counselling, validity and reliability studies, reporting.

Author 2: Qualitative data analysis, reporting, data collection, counselling.

ACKNOWLEDGEMENT

We would like to thank TUBITAK for supporting our project number 122K557 within the scope of TUBITAK 1002. We would also like to thank the senior students at Kırıkkale University, Department of English Translation and Interpreting who participated in this study.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.