

# Efficacy of Sight Translation in English-Japanese Consecutive Interpreting Training in a University Course

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**Abstract**—A special type of simultaneous interpreting, sight translation has been a topic of particular interest as a variant of written and oral translation. The association of sight translation and simultaneous interpreting has been discussed for many pedagogical and professional purposes. However, few studies based on empirical evaluation have investigated the efficacy of sight translation as a comprehension component in relation to consecutive interpreting. This study examined the effectiveness of intensive sight translation activities for the subsequent training in consecutive interpreting of students registered on an English-Japanese interpreting course at a university in Japan. Data analysis revealed the efficacy of sight translation practice but showed that it had no significant impact on consecutive interpreting. Several exploratory analyses were conducted that may provide insight into the characteristics of the two distinct modalities by presenting the differences in processing capacities needed by the two respective modes.

**Index Terms**—sight translation, consecutive interpreting, visual input, oral translation, training, university

## I. INTRODUCTION

Interpreting and translation perform essentially the same functions, namely, re-expressing in one language what has been expressed in another for communicative or other purposes (Gile, 2009). However, three functions are considered to be within the purview of language professionals: translation, interpreting, and sight translation (National Council on Interpreting in Health Care, 2009). Sight translation (ST) is defined as a specific type of written translation, as well as a variant of oral translation (Nilsen & Monsrud, 2015). More specifically, ST is the oral rendition of a text written in one language into another, with the interpreter translating the source text at sight (Pöchhacker, 2016). Professionally, ST is an indispensable mode of interpreting, frequently used in settings in which immediate access to information presented in a foreign language is required.

From a pedagogical perspective, ST has received little attention in the last few decades; most authors have discussed ST as a preliminary exercise rather than as a curricular component (Pöchhacker, 2016). Recent advocacy for ST has been on the rise, however, because of the clear need for education and training in academic and professional fields (Nilsen & Monsrud, 2015; Pöchhacker, 2016). ST has been viewed as a pedagogical exercise for raising students' awareness of syntactic and stylistic differences between the source language and the target language (Nilsen & Monsrud, 2015). At present, ST is used by many schools as a preparatory exercise for an interpreting course in order to lay the foundation for the acquisition of skills in consecutive and simultaneous interpreting.

Didactic suggestions for the inclusion of ST practice in curricula have increasingly been emphasized; this is the case even in Japan. For example, a lengthy project for ST studies was launched in Japan in 2015 by prominent scholars of interpreting studies in affiliation with the Japan Association of Interpreting and Translation Studies. The project members have been exploring ST through a multilateral approach to its practice, research, and education, as well as attempting to establish a framework for ST by exploring its diverse applications (<http://www.jaits.org/>).

To date, interpreting studies have advanced our understanding of certain characteristics of ST. However, little research has consisted of a comparative analysis between ST and consecutive interpreting (CI). CI is defined as the process of interpreting after the speaker or signer has relayed one or more ideas in the source language, and then pauses while the interpreter transmits that information (Russell, 2005). We may find that ST and CI differ in many respects. On the one hand, ST involves reading whereas CI involves listening. In addition, CI requires note taking whereas ST does not. For CI, the most challenging part is listening and note taking, especially interpreting from the second language to the first language (mother tongue). These skills are unique to CI, and ST may therefore have no effect on CI performance. However, ST and CI also share skills, including rapid source text analysis, fast conversion of messages from one cultural setting to another, public speaking skills, and enhancement in flexibility of expression (Gile, 2009). Given such shared skills, we may assume that ST—in which an interpreter translates a source text aloud while reading it—will facilitate the decoding process because of the interaction of comprehension, semantics, and background knowledge. Those shared characteristics with ST may contribute to enhancing some abilities in CI, namely, understanding of syntactic structures in source speech and fluency of expression.

In 2017, the author taught English/Japanese interpreting to undergraduate students registered for an English interpreting course at a university. For the present research, intensive ST training was offered to a class over one semester in the hope that it would improve students' CI skills. ST tests and CI tests were administered during mid-term and final examinations, respectively. The present study first explores the development of ST skills over one semester. With respect to translation problems that cause difficulties during ST, major errors or deficiencies in rendering are identified. Strategies for solving these problems are then analyzed. Next, the study explores the effect of ST on CI skills. For example, it examines how reading and oral output skills taught through ST activities are related to enhancing CI skills, in which only listening and note-taking skills are critical. Finally, from a pedagogical perspective, the implications of introducing ST activities into academic interpreting courses are clarified.

## II. LITERATURE REVIEW

The most salient attribute of ST that distinguishes it from other modes of interpretation is that "the interpreter's target-text production is simultaneous not with the delivery of the source text but with the interpreter's real-time (visual) reception of the written source text" (Pöchhacker, 2016, p. 20). ST is not paced by the source-language speaker; rather, its rhythm depends on the interpreter, who has some margin of freedom in allocating processing capacity to the reading and analysis effort or to the production effort (Gile, 2002).

As a special mode of simultaneous interpreting (SI), sight interpreting or sight interpretation (Lambert, 2004; Pöchhacker, 2016) is delivered in a booth. This variant of ST involves an interpreter performing SI with a text; that is to say, the interpreter has access to a written script while listening to the original speech and performing SI.

Agrifoglio (2004) identified several features of ST:

- 1) Continuous access to information in the text
- 2) Attention sharing between visual input and oral production
- 3) Coordination of reading and production effort
- 4) Monitoring production while reading
- 5) Progressive access to new information (no previous access) or prior access to information (previous reading)
- 6) Extreme risk of source text interference

In ST, effective preparation for the source-language text in a given time is extremely important to expediting the processing capacity. In a real-time professional interpreting setting, a time constraint for processing the source text before translating it for immediate use is strictly imposed on the interpreter. As the reading effort initially carries the burden of comprehending the written text—which contains all the information in the message plus language components associated with syntax and style—effective layout of notes and graphic presentation of markings are of primary importance when preparing the text (Gile, 2002). In ST, an interpreter has to read ahead to identify the key words and units of translation in order to produce smooth oral interpretations; thus, the source-language text is normally processed by dividing sentences into several translation units. For this purpose, slashes are inserted into the text according to phrases or semantic chunks. This task makes it possible to focus eye movements on shorter text segments, thus reducing the time and capacity required for comprehension (Gile, 2002). In addition, writing the glosses and numbering the semantic chunks in the source text in order of translation can reduce the production capacity requirements.

The most problematic issue in SI is the linguistic interference between the source language and the target language. Gile (2002) stated that in CI and SI, the memory of the source-language words fades to a significant degree before the re-creation of their content in the target language. In ST, by contrast, because they continue to be visually present throughout, the risk of linguistic interference is probably higher than in CI or SI (Chen, 2015). In other words, this constant shifting of the translator's visual contact with the source text and the presence of the written text makes it much more difficult for the interpreter to perform ST than other modes of interpretation do (Mikkelsen et al., 1995). Agrifoglio (2004, p. 47) notes that "the main difficulty of ST lies not in the written nature of the source text, but in the smooth coordination of the Reading, Memory and Production Efforts, while struggling against increased visual interference from the source language."

From a pedagogical standpoint, in interpreting training, we may assume that ST would be an effective tool to help students recognize the difference in syntax and style between the second language and the first language (the native language). ST has been considered useful for the development of oral and language-transfer skills in the process of syntactically restructuring and paraphrasing a source text (Ilg & Lambert, 1996). In recent years, advocacy for the use of ST has increased for education and training in the academic and professional interpreting fields as its need has become clear. Nevertheless, empirical studies are insufficient in relation to the association of ST with CI in training and practice.

Gile (2009) explains the functions of ST and CI by using their respective models. CI uses a two-phase model involving a listening phase and a reformulation phase. The listening phase requires listening and an analysis effort that refers to all comprehension-oriented operations. In the reformulation phase, it requires a production effort in which the interpreter takes notes to support his or her memory. The note-taking technique is crucially important to reducing memory load constraints.

If we compare Gile's model on ST to CI:

ST = analytical reading + memory + production + coordination

CI = (analytical listening + memory + note taking) + (note reading + recall of information + production)

There is a critical difference between the two tasks. CI involves listening and note taking, which is definitely the most challenging part because it determines the accuracy of CI.

On the other hand, as was mentioned earlier, ST and CI also share skills, such as rapid source text analysis, fast conversion of messages from one cultural setting to another, public speaking skills, and enhancement in flexibility of expression (Agrifoglio, 2004). In this context, the author first explores how the intensive ST training offered to the students during the semester developed their own ST skills. Next the author investigates the effect of ST on CI in order to justify the use of ST activities to improve students' CI performances in an academic arena.

### III. METHODS

#### A. Research Question

The author presented the following questions.

- 1) Will intensive ST training, if offered to university students over a semester, develop their abilities in ST?
- 2) Will intensive ST training, if offered to university students over a semester, develop their abilities in CI?

#### B. Research Participants

The present research was conducted during Spring Semester 2017 at the Japanese university at which the author lectured. The research participants were 16 students in a mixed class of third- and fourth-year students. They were English major students registered in introductory courses of English-to-Japanese interpreting who had never undergone ST or CI training in the past. No screening tests were conducted when the students registered for the courses. The latest TOEIC (Test of English for International Communication) score obtained by the students ranged from 495 to 695 points.

#### C. Procedures

Fifteen lessons were presented over the semester, each lasting three hours. Intensive ST training was offered for the first hour, with two-hour CI training sessions undertaken shortly after the ST activity was completed. During the semester, all lessons were carried out in the CALL (Computer Assisted Language Learning) room.

The textbooks used for the ST activities were *Shadowing* (Kadota & Tamai, 2004), *Introduction to Bilingual Interpretation* (Ohata, Okuda, & Tanimoto, 2009), *Tsuuyakugaku 101* (Tomono, Miyamoto, & Minamitsu, 2012), and other books specializing in interpreting studies. In addition, newspaper articles, editorials, and internet resources in the fields of business, cross-cultural communication, culture, environment, and politics were also used as source texts. ST activities entailed the following tasks, conducted in the order listed below.

##### 1) Source Text Preparation

Unknown words in the source text constitute a major problem for students during ST. Students were first instructed to check for lexical problems and, if there were unknown words, to look them up in dictionaries. Second, the students processed the source text in several ways; for example, determining the smallest semantic segments in the sentences and inserting slashes to create translation units for the purpose of translating linearly. It was necessary to write glosses and number semantic segments in order of translation when the syntactic structure was difficult to translate linearly. All these tasks were to be completed within a time limit and shortly before the delivery of ST. The imposition of time constraints may be one of the most integral parts of didactic classroom instructions in ST activities.

##### 2) Pair or Group Practice with Peer Review

Students worked in pairs or groups, during which they took turns to verbalize the translation, one paragraph at a time. Students evaluated each other's performance to improve the quality of individual oral performance.

##### 3) Oral Representation as a Rehearsal

After group practice, individual students translated the entire source text orally, using microphones attached to headsets. Through the monitoring system in the CALL room, the author monitored each student. The author assisted by providing suggestions, comments, and corrections on each student's performance, without being heard by other students.

##### 4) Oral Representation before an Audience

A student was then selected to perform a complete oral translation of the source text that had been previously practiced in step 3, and this effort was heard not only by the author but also by the other students in the classroom.

##### 5) Recording Individual Students' Performances

In order to identify specific causes of translation problems, students were asked to record their ST performances on their own computers and then to listen to them carefully, with the text visible, to discover a solution for specific problems. This recording process was repeated several times. Upon recording, clear output, right intonation, proper pauses, and even elocution were exercised in the students' performances, as though they were making a real speech (Viaggio, 1992). For this purpose, honorific terms, polite lines, and humble forms in the Japanese language were used. Furthermore, the students were asked to distance themselves from the form of the source text and to develop rhetorical skills to avoid literal translation (Lee, 2012).

With regard to CI from L2 to L1 (English to Japanese), training was applied in the following order:

- 1) Listening

Students listened to the source-language text once, with the textbook closed to learn the text's outline.

2) Shadowing, Repeating, or Retention

Students performed the abovementioned interpretation-related tasks selected according to the intelligibility of the source text to prepare for CI.

3) Oral Representation as Rehearsal and Monitoring

Students were asked to listen to up to four source-language sentences at a time with the textbook closed. They were then instructed to interpret the sentences together verbally in the target language, using microphones attached to their headsets. Each student's performance was monitored by the author, and instructions were given to students when necessary. Such interactions could only be heard by the student and the author.

4) Oral Representation before an Audience

A student was then selected to perform a complete consecutive target-language interpreting of the message he or she had listened to in step three. This performance was heard not only by the author but also by the other students.

5) Recording Individual Students' Performances

To identify specific causes of interpreting problems, students were asked to record their CI performances on their computers. Afterward, they listened carefully to their recordings, with the source text open, to develop strategies for solving specific processing problems. Recordings of their performances were repeated several times to improve their performance quality.

#### D. Data Collection

Data were collected on two occasions: From the mid-term examination held at the end of the eighth lesson, and from the final examination implemented after the 15th lesson. The subjects were 16 students. The procedures during the examinations were as follows:

1) Students were given an unknown source text in English. They immediately proceeded to process the text. The time limit for processing the source text was three minutes.

2) Students were then asked to perform ST verbally, within four minutes. Performances were recorded on students' own computers.

3) The students were then asked to perform CI from English to Japanese, as well as from Japanese to English. These source materials were not relevant to the present research. The irrelevant test items were inserted here between the ST and CI test items that followed to reduce the practice effect of ST on CI. The duration of step 3) was 40 minutes.

4) Finally, they performed the CI for the same source text as had been used for the earlier ST test in 2), which was also recorded on each computer. To examine the effectiveness of ST on CI, the same source text was used for both ST and CI.

The duration from step 1 to step 4 was 70 minutes for both the mid-term and final examinations. Performances of ST and CI recorded on the students' computers were copied onto a USB flash drive and assessed by the author.

#### E. Material

The test items for the mid-term and final examinations were presented by the same speaker. The difficulty levels of the source text for both examinations, in terms of intelligibility, syntactic complexity, vocabulary, and familiarity with the text information, were almost the same.

The test item of the mid-term examination referred to "Job hunting in Japan" and had a word count of 336 words. The test item of the final examination comprised 268 words and related to Donald Keene, a renowned expert in Japanese literature and culture (Tomono, Miyamoto, & Minamitsu, 2012).

The mid-term examination (336 words):

"Job hunting in Japan"

Fall is one of the most beautiful seasons in Japan, but for third-year college students, it is also the time for one of the most challenging events of their lives—job hunting. The students rush to attend company seminars, preliminary exams, and job fairs.... Statistics show that on average one out of three new employees quits his or her first job within three years—a surprisingly high turnover rate after all the effort both on the part of company recruiters and students applicants. Isn't it time to review the entire recruiting system in Japan?

*Tsuuyakugaku 101* (Tomono, Miyamoto, & Minamitsu, 2012)

The final examination (268 words):

"Donald Keene"

On April 26, 2011, Donald Keene, an 88-year-old renowned expert in Japanese literature and culture, gave his last speech at Columbia University in which he announced that he would be leaving the United States in order to spend the

rest of his life in Japan.... Since the two-volume novel cost only 59 cents, Keene immediately purchased it and was absorbed by the story of that world as narrated by a court lady a millennium earlier. That was how he began his life-long journey as a scholar in Japanese literature.

*Tsuuyakugaku 101* (Tomono, Miyamoto & Minamitsu, 2012)

#### F. Measurements

The criteria of Viaggio (1992, 1995) for ST and CI were used for assessing the students' recorded performances:

- 1) Comprehension (Has the student understood everything and understood it correctly?)
- 2) Re-expression (Did the student make any syntactic or lexical mistakes?)
- 3) Style (Could it have been better expressed?)

In terms of T-units, defined by Hunt (1965, p.20) as the "shortest grammatically allowable sentences into which writing can be split or a minimally terminable unit" (i.e., a dominant clause and its dependent clause), every detail of each translated unit was assessed using a scoring rubric created by the author, which allocated specific points to each translation unit (Yamada, 2015). If the translation of a specific sentence was left incomplete, it received zero points. To ascertain the difficulty level of a specific word, a "word frequency list" from the relevant academic area was used (<http://www.wordandphrase.info/frequencyList.asp>). Using this analytic protocol, the data were analyzed using an F-test and a *t*-test.

## IV. RESULTS

### A. Quantitative Analysis

First, the marks obtained in the mid-term and the final examinations for ST were compared.

TABLE 1  
DESCRIPTIVE STATISTICS OF MARKS OBTAINED IN SIGHT TRANSLATION DURING THE MID-TERM AND FINAL EXAMINATIONS

	N	Mean	SD	<i>t</i>
Mid-term	16	18.56	6.54	.004
Final	16	29.06	12.34	.004

Note. \*\*\**p* < .001 Full marks are 50 points.

As shown, the difference in the marks obtained in ST between the mid-term and the final examinations are statistically significant ( $p < .001$ ). This demonstrates that the students markedly developed their ST skills through the ST activities applied during a semester. Next, the marks obtained in the CI performed in the mid-term and final examinations are shown in Table 2.

TABLE 2  
DESCRIPTIVE STATISTICS OF MARKS OBTAINED IN CONSECUTIVE INTERPRETING IN THE MID-TERM AND FINAL EXAMINATIONS

	N	Mean	SD	<i>t</i>
Mid-term	16	26.38	9.05	-.948
Final	16	28.19	12.48	-.948

Note. Full marks are 50 points.

As shown, the difference is not statistically significant ( $p = .358$ ) for the marks obtained for the CI between the mid-term and the final examinations. The results indicate that the students did not significantly develop CI skills during the semester.

Next, the marks obtained for ST and the subsequent CI (both of which used the same source text) were compared to the mid-term (Table 3) and final examinations (Table 4), respectively, to examine the effect of ST on CI performance.

TABLE 3  
DESCRIPTIVE STATISTICS OF MARKS OBTAINED IN SIGHT TRANSLATION AND CONSECUTIVE INTERPRETING IN THE MID-TERM EXAMINATION

	N	Mean	SD	<i>t</i>
ST	16	18.56	6.54	-6.58
CI	16	26.38	9.05	-6.58

Note. Full marks are 50 points. \*\*\**p* < .001

TABLE 4  
DESCRIPTIVE STATISTICS OF MARKS OBTAINED IN SIGHT TRANSLATION AND CONSECUTIVE INTERPRETING IN THE FINAL EXAMINATION

	N	Mean	SD	<i>t</i>
ST	16	29.06	12.34	0.49
CI	16	28.19	12.48	0.49

Note. Full marks are 50 points.

We can observe the statistical difference between the marks in ST and CI for the mid-term examination. CI scored significantly higher than did ST. By contrast, no statistical difference was produced in the final examination ( $p = 0.67$ ).

### B. Qualitative Analysis

Next, the author divided the students' ST problems into four categories, referring to the aforementioned criteria from Viaggio (1992). The data were analyzed according to the following criteria:

1) Mistakes in comprehension involving linguistic understanding or conceptual understanding, and mistakes in syntactic analysis owing to weak command of the source language

The mid-term examination consisted of seven paragraphs. Most of the students had no significant comprehension problems in paragraphs one to four, which described the current situation of "job hunting in Japan." However, from the fifth paragraph, as the writer begins to express specific thoughts using complex syntactic structures, the students appeared to encounter the first stumbling block in exercising linguistic and conceptual understanding. The fifth paragraph is as follows:

"It is impressive to see how students can be tough enough to skillfully juggle all of these activities. Of course, they have been trained to be tough, already having made their way through college entrance exam hell. Still, to a large extent, job hunting dominates their young lives" (Tomono, Miyamoto, & Minamitsu, 2012; my emphasis).

The syntactic analysis of the first sentence, including the word "how," was a problem for the majority of students. It appears that some students may not have understood the syntactic structure. Others, although they seemed to have analyzed the structure of the sentence accurately, may not have been able to coordinate their syntactic understanding and construction. Consequently, they used repair and omission, which resulted in an awkwardly coordinated translation to Japanese. One example of a translation is as follows: "It is impressive, and students are tough, and they did these activities well."

2) Lexical problems that lead to awkward rendering because of an inability to come up with fixed equivalents

Several students were unable to translate the following underlined words into proper Japanese:

"It is also the time for one of the most challenging events of their lives—job hunting." "... because they wear standard black and white interview suits, formal business shoes, and carry black attach écases" (Tomono, Miyamoto, & Minamitsu, 2012; my emphasis).

In these sentences, the underlined lexical items may have been familiar to the students; they had difficulty coming up with suitable equivalents in Japanese. In most cases, uncertainty in choice of vocabulary was the problem.

3) Expression problems for acceptable translation

"Since the two-volume novel cost only 59 cents, Keene immediately purchased it, and was absorbed by the story of that world as narrated by a court lady a millennium earlier" (Tomono, Miyamoto, & Minamitsu, 2012; my emphasis).

The first half of this sentence was generally well translated, whereas the latter half, including the underlined portion, was not rendered in proper Japanese by the majority of students. Though the translation of "court lady" and "millennium" were shown in the vocabulary list, they were unable to link the English and Japanese styles well enough to express the phrase "as narrated by."

4) Incompletion of work within the allocated time

In the mid-term examination, the majority of students completed only the first four paragraphs (191 words) in ST, and none of them were able to finish it completely. On the other hand, in the final examination, most students completed the ST for the first five paragraphs (224 words) out of a total of six paragraphs. Five students completed the translation of all the paragraphs within the time limit. Although the intelligibility and familiarity of the two source texts were almost equivalent, the students translated a significantly higher number of words in the final examination than in the mid-term examination.

## V. DISCUSSION

### A. Testing of Research Question 1

1) Will intensive ST training, if offered to university students over a semester, develop their abilities in ST?

In the present research, intensive ST practice was offered for one hour, once a week, adding up to 15 hours during the semester. The duration and frequency may not be sufficient for identifying remarkable development in ST skills. Nevertheless, the results indicate that the difference between the marks for ST in the mid-term and final examinations were statistically significant ( $p < .001$ ). This finding suggests that ST may be a trainable activity and that the more ST training students receive, the better the skills they will acquire.

Furthermore, with regard to verbal performance of ST, there was a phenomenal improvement in the students' oral abilities from the mid-term to final examinations. In the mid-term examination, students seemed uncertain about appropriate word selection when given a choice. However, in the final examination, they appeared to have become more aware of completing the work in a given span of time. Hesitation, fixation, regression, frequent pauses, retorts, and disfluency in speaking were thereby significantly reduced. The free flow and tempo of their verbal output clearly improved, resulting in an increase in the total number of words translated. During ST training, they may have learned how to access continuous or progressive information in the text. It is likely that they acquired the skills and/or techniques to divide their attention between visual input and oral constructions as they practiced the coordination of reading and translating. In this process, the students may have become more aware of tempo, resulting in an increase in

rendering speed. This suggests that the appropriate speed of interpretation is of primary importance to completing ST in a given time span.

Students may have employed several strategies to make this development possible. First, when they were unable to follow the context, they may have used their reasoning skills to determine the main idea by inferring from the context. If they remained unable to translate a specific phrase, they almost omitted that part and restarted from the next phrase while paraphrasing the problematic area—sometimes even inventing a translation for it. When they had lexical problems, some of them inferred the meaning of unknown words from the context. When they failed to complete the automatic equivalent translation for a specific word or phrase, they produced word-for-word translations. Some students adopted several strategies to solve their problems, while others remained unable to exercise these strategies when encountering a complex sentence structure and/or unknown word.

Next, the students used various strategies with respect to the “extreme risk of source text interference in ST.” In fact, the majority of students had problems rendering plausible Japanese that was pleasing to the ear. When they encountered an additional phrase or language component in a relatively long sentence, such as “Statistics show that on average one out of three new employees quits his or her first job within three years—a surprisingly high turnover rate after all the effort both on the part of company recruiters and students applicants.” they struggled. It appears that they were unable to read further on to execute verbal output in plausible Japanese for the underlined part because of an inability to monitor output while reading.

When one performs ST from English to Japanese, semantic phrases are supposed to be translated linearly, that is, in order of head-initial to head-final linearity, which is syntactically different from Japanese. This difference seems to be a major stumbling block for students. Viezzi (1990) explains that in the case of morphosyntactically dissimilar language pairs, source text interference is more likely to occur than in other language pairs because of the impact of morphosyntactic transformation on processing resources. Gile (2002) notes that Japanese grammar is rather rigid because it imposes strict conditions on the order of elements in the sentence, as well as grammatical agreement conditions. Because the morphosyntactic structure is distinctively different in English and Japanese, many students probably found it difficult to render English into plausible Japanese. More specifically, when relaying their initial thoughts in Japanese, the students could not complete the translation, which resulted in an awkward Japanese rendition. Consequently, they stopped translating or restarted from the beginning to compensate for the inadequate Japanese expression.

Another interesting revelation concerning linguistic interference is the fact that when students performed CI, linguistic interference did not occur more often than in ST. Surprisingly, when consecutively interpreting the aforementioned sentence, many students gave a more natural rendition than in ST. In fact, the data indicate that students obtained 18.6 points out of 50 for ST and 26.4 points for CI when translating the same source text in the mid-term examination; they obtained 29.0 points for ST and 28.1 points for CI in the final examination. It was initially assumed that the score for ST would substantially exceed the score for CI because ST does not entail a risk of misinterpretation caused by insufficient listening comprehension abilities. Memory failure would be likely to occur more frequently in CI than in ST because the source text is visually present throughout. However, the research yielded results contrary to this assumption.

In CI, it appears that in the process of rendition they solved a particular syntactic problem instantaneously at a cognitive level. It seems likely that the students adopted a strategy of monitoring the construction of sentences at an unconscious level and therefore that they verbalized a plausible translation in Japanese automatically, without thinking about whether it had been properly expressed. We may suppose that when verbally interpreting from a source language to the interpreter’s mother tongue language, a strategy for monitoring sentence construction is automatically set in motion. Consequently, the interpreter edits his or her own words while translating into Japanese. In this process, erroneous expressions may be mitigated, thereby producing plausible Japanese translations in CI. For example, they appeared either to guess the meaning of the unknown word from the context or to ignore the word altogether—apparently judging whether it was crucial to the discourse—both of which may have been done instantaneously at a cognitive level.

By contrast, during ST, when students can see the source text throughout the output performance, they seemed to have been more aware of language inadequacy, particularly in terms of expression, when compared to CI. This may have hindered coherent and fluent translation. Upon encountering unknown words in the source text in ST, they sometimes paused or even stopped translating. In this respect, Gile’s (2002) statement that the risk of linguistic interference is probably higher in ST than in CI appears to be correct.

Another noteworthy issue concerns the rhetorical skill of orality in ST. Angelelli (1999) contends that ST should sound as if the interpreter were reading a document in the target language, which implies a smooth delivery, devoid of hesitations and pauses. When sight translating the source text of formal speech or an address at a ceremony, the students were instructed to be extra careful about using correct, honorific, and humble wording in Japanese. In the didactic setting of written translation in junior and senior high school, however, they appear to have already become used to translating English sentences into Japanese without using honorific expressions. Thus, some of them seemed to find it difficult to adjust their current translational style into the formal and polite Japanese language style. Hence, training in ST for formal speech or an address is extremely important in further training for students to acquire language

proficiency in their mother tongue. In this regard, ST activities also greatly help to develop verbal competence in the target language.

### *B. Testing of Research Question 2*

2) Will intensive ST training, if offered to university students over a semester, develop their abilities in CI?

The study offers important observations concerning the second research question. In a broader sense, when the mid-term and final examination marks in ST and CI were compared, mixed results were produced. CI yielded a significantly higher score than ST did in the mid-term examination. It is assumed that students had not yet acclimatized to the ST environment in the middle of the semester. In addition, ST has several features that distinguish it from other modes of interpreting, such as comprehension of the visually presented source text. This entails the risk of interference, which hinders the ability to present clear and fluent delivery. This may have resulted in lower scores for ST than CI. However, students gradually developed their ST skills in the latter half of the semester. Consequently, they obtained high scores in ST in the final examination whereas their CI skills did not develop in line with their ST skills.

Next, when comparing the obtained marks by ST and the subsequent CI, where both tasks were performed using identical source materials, they showed no statistical difference in the final examination. This suggests that ST may not be an effective tool for enhancing immediate CI performance for new learners. To put it differently, the shared skills of SI and CI such as rapid source text analysis including syntactic analysis, quick conversion from L2 to L1 and flexible expression may not directly contribute to enhancing the quality of immediate CI performance. It was anticipated that the previous ST task with textual support might make it easier for students to perform subsequent CI because they had already come to understand the syntactic structures and language components of the source text from performing ST. Thus, ST might help to improve performance with CI, to the extent that students might outperform ST in scores. However, the results were not in line with the anticipated outcome.

The relatively lower score in CI may have resulted from the students' insufficient processing capacity for CI, in which the listening phase is critical. Due to cognitive load and the need to pay full attention while listening, the students' processing capacity may have been overwhelmed. Furthermore, the processing capacity required for listening in CI is largely determined by the note taking of students, during which incoming information is accumulated in the short-term memory. Reformulation of a message may depend heavily on the way in which notes are taken, a technical skill that requires training over a long span of time. Therefore, the information in the source text that had been acquired through ST by the students may not have been reflected well in their CI performance.

In the listening phases, languages with many short words and homophones and few grammatical indicators, such as Chinese and Japanese, may be more vulnerable than others (Gile, 2004). In this regard, the shared skills of ST with CI may not directly contribute to enhancing the accuracy of immediate CI performance. Alternatively, another feature of ST may have exerted a positive effect on the students' processing capacity and ability to analyze syntactic structure. Linearity in translation increases students' awareness of semantics and sentence structures. This, ultimately, would help students to comprehend each phrase in the source text linearly, in the order in which they listened. Were they to acquire this technique, they would learn how to reduce the cognitive load borne in CI. In other words, if students learn how to translate the incoming information uttered by the speaker linearly through a segmented process, they can reduce their cognitive load. It may therefore be advisable to teach ST and related segmenting skills in CI training, particularly for new learners of interpreting.

Next, a comparison of individual students' ST and CI when conducting the qualitative analysis produced results that highlighted specific comprehension problems with logical structures and language components. In many cases, these problems occurred in ST, but it was also observed in the very same phrases or sentences in CI. Frequency, distribution, and type of syntactic error were almost identical between ST and CI products. In other words, the complex syntactic structure and language components that seemingly confused a student in ST seemed to cause the same difficulty in CI.

From the perspective of linguistic theory, when performing ST, initial reading of the text imposes a heavy burden on the interpreter, namely, that of comprehending the logical structure and language components associated with syntax and style in the written text. This task requires a fair amount of linguistic skills. Thus, students who do not demonstrate reasonable linguistic skills in ST will not be able to understand the same syntactic structure presented in CI. This implies that the main cause of the problems may be rooted in a deficiency in the students' linguistic understanding. It was initially assumed that some students might not consecutively interpret well owing to a lack of listening comprehension ability. However, it seems possible that they were unable to interpret well not because they lacked listening abilities but because they lacked linguistic understanding, such as analytical skills and comprehension of complex sentence structures. Since the syntactic and lexical mistakes that occurred in ST almost exactly matched those occurring in CI, it may be assumed that comprehension by reading and comprehension by listening are more closely linked to each other than initially expected. However, cognitive processing during reading and listening has not been closely analyzed here. Future studies should explore the cognitive processes associated with syntactic, lexical, and strategic translation problems in both modalities based on more thorough examination. Although the findings in this research are preliminary, it will contribute to a better understanding of the efficacy of ST when learning CI.

## VI. CONCLUSION AND PEDAGOGICAL IMPLICATIONS



This study attempted to examine the efficacy of ST training for English-to-Japanese CI and to discuss the relationship between ST and CI. The findings indicate that students significantly enhanced their ST skills during the administration period, whereas the data did not demonstrate any appreciable difference in the development of CI in the given span of time. In other words, a noticeable effectiveness of ST on CI performance was not observed. This result may be due to a deficiency in students' processing capacity for CI, which relies purely on auditory intake and involves complex cognitive processing. Their note-taking skills when reformulating messages may not have improved sufficiently either. In addition, the frequency and duration of ST training may not have been sufficient to produce any salient efficacy of ST on CI for untrained students in interpreting course.

However, when comparing ST with CI in terms of output products of students, they were clearly related in both dimensions. This result suggests that students' inability to interpret well may arise in part from a lack of linguistic understanding, such as analytical skills for comprehending syntactic structures and complex language components. To reduce the burden of processing complex structures, ST may be helpful. In this context, enhancing linguistic understanding through ST activities is of crucial importance in the methodology of interpreting education offered at universities.

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