

## **THE RELATION BETWEEN ST DELIVERY RATE AND QUALITY IN SIMULTANEOUS INTERPRETATION**

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### 1. Introduction

The aim of this experimental study was to shed light on the relation between source text (ST) delivery rate and quality in simultaneous interpretation (SI). In particular, attention was devoted to the potential negative effect that a ST delivered at high rate had on the simultaneous interpreter's performance, both in terms of meaning equivalence between ST and target text (TT) and in terms of TT delivery fluency.

This type of analysis was chosen because, among the large variety of external working conditions that may influence interpretation quality, high ST delivery rate is a variable that often causes additional stress to the already fatiguing task of SI and may undermine the quality of the interpreter's performance.

Interpretation quality may fall off both from the viewpoint of meaning and of delivery fluency. An interpreting performance may be considered good when an accurate translation of the ST's linguistic<sup>1</sup> message in the target language (TL) is carried out and when the interpreter is able to adequately reproduce in the TL the contextually determined pragmatic sense (Moser-Mercer 1985, Bühler 1986, Kurz 1988, Altman 1994, Kopczynski 1994). In this study, high ST delivery rate was put in relation with both aspects, whereas investigations on this topic carried out in the past were based exclusively on the negative influence that a ST delivered at high rate had on SI quality from the point of view of meaning (Gerver 1971, Galli 1990). These investigations did not consider the possible impact of ST rate on the delivery fluency of the SI.

The potential negative impact of a high ST delivery rate on quality in SI was examined in this study by means of an experiment in which two STs read at low and high rate respectively, were interpreted by two groups of subjects. All TTs were analysed first from the viewpoint of meaning accuracy, in order to assess whether the message conveyed in the ST matched the message of the TT, and then from the viewpoint of delivery, so as to assess whether the interpreters' performance was fluent or not. To do this, two different groups of error

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1 The terms linguistic and extra-linguistic used in the present article are taken from Bühler (1986).

evaluation categories were used, namely (a) omissions, substitutions, additions and logical-time sequence deviations to analyse meaning; and (b) pronunciation/phonation errors, use of unfilled pauses, filled pauses, repetitions, corrections and false starts to analyse SI fluency. Both groups of evaluation categories were taken from Riccardi (1999, 2001).

The subjects participating in this experiment belonged to two different categories. One group was made up of students and the other of professional interpreters. These two subject categories were chosen in order to assess whether and to what extent they could have different reactions when facing the translation of a ST delivered at high rate. Following Moser-Mercer's (1997) statement, according to which

[...] differences between experts and novices can be seen at various levels: 1. at the level of the knowledge base, and 2. at the level of strategies<sup>2</sup> (1997:25) [...],

this investigation aimed at assessing whether two different groups of subjects with different expertise and thus with a different knowledge base made the same mistakes or had the same problems when coping with a ST read at high delivery rate. Moreover, since Gerver's study on rate in SI focused only on the reaction of professional interpreters, by means of this study, in which the reaction of students facing STs read at high rate was considered as well, it was possible to analyse the relation between source text (ST) delivery rate and quality in simultaneous interpretation (SI) from another perspective.

### 1.1. Gerver's investigation: a reference study

The starting point of the present study was Gerver's (1971) investigation on the effects of input delivery rate on simultaneous interpretation as performed by professional interpreters. Gerver's study may be considered as the "only investigation of the kind" (Anderson 1979: 11). Although carried out by a psycholinguist and not by an interpreter, Gerver's analysis may be seen as the only one focusing upon the relations between TT quality and ST delivery rate. In particular, Gerver examined the effects of fast delivery rate on the performance of simultaneous interpreters by systematically increasing the rate of some ST passages.

For his experimental study, 10 professional simultaneous conference interpreters were chosen. Five subjects were "allotted to the shadowing condition, five to the interpreting condition" (Gerver 1971: 165). The error

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2 Strategies were not examined in the present investigation.

categories employed by Gerver to examine the discontinuities in the output compared to the input were the following:

[...] omissions of words, omissions of phrases, omissions of longer stretches of input of eight words or more; substitutions of words, substitutions of phrases, corrections of words and corrections of phrases  
[...] (Gerver 1971: 163)

Gerver's investigation on the main discrepancies between ST and TT also included other dependent variables such as the number of words correctly shadowed or translated, ear-voice span (EVS), utterance time and unfilled pauses. ST delivery rate was changed at intervals of approximately 110 words with rates ranging from 95, 112, 120, 142 to 164 words per minute (wpm).

According to Gerver's results on the discrepancies between ST and TT, quality in interpretation falls off in passages delivered at high rate. He noticed that under normal conditions, attention can be shared between the input message, the processes involved in translating the previous message and the monitoring of feedback from current output. But when total capacity of the interpreter is exceeded, less attention can be paid either to input or output. Hence, less material is retrieved for translation and more omissions followed by uncorrected errors occur. Gerver stated, indeed, that

[...] the principal effect of increasing presentation rate is the increase of the number of discontinuities in all categories [...] (Gerver 1971: 182)

Despite Gerver's unequivocal contribution to interpretation research on quality and its relation with rate, he limited his investigation to the mere formal comparison between ST and TT message. In fact, every ST word or phrase the interpreter deleted in his translation was considered a serious omission and subsequently an error. Thus he neglected that some deletions could have been deliberate and contributed to a greater TT clarity.

Therefore, starting from Gerver's approach, as well as from the hypothesis that rate may be the cause of a general fall off in the interpreter's performance, the purpose of the present investigation was to find out whether the above statement could be considered truthful and whether high SL delivery rate always determines an increase in all error categories or whether it causes an increase only in some categories or even one of them.

Gerver's error analysis also comprised non-semantic categories, but none of them contemplated aspects relating to delivery fluency (such as phonation, number of filled pauses, repetitions, corrections or false starts). Since a good interpreting performance also depends on the way the interpreter delivers the TL message, in the present study the above mentioned extra-linguistic delivery

categories and in particular the possible interdependence between them and linguistic error categories was examined as well.

Finally, in order to see whether Gerver's theory on the effects of SL presentation rate on the interpreter's ear-voice span (EVS) could be confirmed or not, this aspect has also been considered in this investigation. Indeed, Gerver's analysis results revealed that when interpreting a ST delivered at increased rate, interpreters tend to increase their distance from the speaker without changing their output rate, whereas shadowers increase their output rate without varying their EVS:

Though shadowers' ear-voice span rose only slightly from slowest to fastest presentation rate, the interpreter's ear-voice span almost doubled over the same range. [...] Interpreters [...] seemed only able to maintain fairly steady output at the expense of lagging further and further behind as input rate increased. (Gerver 1971: 181)

This aspect has been analysed in the present investigation also observing the differences or similarities between students and professional interpreters, so as to assess whether both subject categories increased or decreased their EVS.

## 2. Experimental Study

### 2.1. Methods

This experimental study was carried out at the SSLMIT of the University of Trieste and is based on the simultaneous interpretation performed from German into Italian of two original speeches written in German read by a German mother-tongue speaker and recorded. All deliveries were recorded and transcripts were made out of them.

### 2.2. Source Texts

For this experimental study two STs delivered at different speaking rate were used. The two STs were original speeches of the same length pronounced by Chancellor Gerhard Schröder at two official events. The fast speech was held before the German Parliament, the Bundestag and the slow speech was held during the Europe Forum at the Bertelsmann Foundation. Both texts dealt with a similar topic, namely Europe and its enlargement process, in order to avoid differences between them in terms of meaning. Both speeches were delivered by the same speaker. The fast ST lasted 6.44 minutes and the slow ST lasted 8.29 minutes.

Both texts were interpreted by a group of students as well as by a group of professional interpreters. The different delivery rate of the two STs was measured in syllables per minute. The rate of the ST read out "slowly"<sup>3</sup> was 196 syllables per minute (i.e. approximately 108 words per minute); whereas the rate of the ST read out at "fast"<sup>4</sup> rate was 302 syllables per minute (i.e. approximately 145 words per minute).

A further difference between SST and FST regards the number of pauses recorded in them. Pauses play an important role for the measurement of rate: the more pauses a speaker makes in his/her speech, the slower his/her rate and vice versa. In the FST 2 pauses which last more than 3 seconds were recorded and 14 pauses of the same length were recorded in the SST. Pause quantity in speeches is in inverse relation to information density: the greater the information density in a text, the smaller its pause quantity. This fact has a considerable impact upon the interpreting process.

### 2.3. Subjects

Subjects tested in the present study were 10 students of interpretation in their final or extra years of course. Five had German as their B language and five had German as their C language. Two participants had already graduated, but because of their limited working experience they could not be considered professional interpreters yet. A group of five professional interpreters took part in the experiment as well. Three of them had German as their B language and two had German as their C language.

### Questionnaires

At the end of both interpreting performances the interpreters were asked to fill up a questionnaire. They were asked to evaluate the quality of their SIs in terms of meaning and fluency and to state whether they believed that fast ST delivery rate had influenced their performance or not.

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3 The acronym SST will be used for the ST read out slowly and the acronym STT will be used for the slow TT.

4 The acronym FST will be used for the ST read at fast rate and the acronym FTT will be used for the fast TT.

#### 2.4. Evaluation Criteria

Following the aim of this experimental study, the main discrepancies between STs and TTs in terms of quality were assessed, so as to determine whether and to what extent they could be considered the direct consequence of ST delivery rate variation.

The criteria chosen to evaluate the interpreters' performances are basically of two kinds: one type belongs to the macro evaluation field of meaning and its equivalence in ST and TT; the other type refers to quality in terms of interpretation delivery fluency. The criteria chosen for both evaluation fields were taken from Riccardi's (1999, 2001) evaluation grids by which both students' and professionals' interpreting performances may be assessed.

As far as meaning is concerned, equivalence depends upon the information units and their relevance in both ST and TT. Not every change made by the interpreter automatically modifies the ST's substance. Therefore, during the evaluation process of the interpreters' performances, the importance and effectiveness of the possible changes made by the interpreters were considered as well.

The error categories used to examine the discontinuities in terms of meaning between TTs and STs are the following:

##### I Omissions

This category includes omissions in the TT of basic ST information units. This phenomenon causes a distortion of the ST meaning.

As maintained by Russo and Rucci (1997), omission may be seen as the result of two different choices: in the first case, deletion is deliberate and aims at greater TT clarity; whereas in the second case, the interpreter, lagging behind in the elaboration of the previous information unit, deletes one or more following information units. Therefore, special attention was devoted to the second type of omission mentioned by Russo and Rucci, because the delay in the elaboration of information units is a common reaction interpreters may have when facing STs delivered at high rate.

This error category is divided into two subcategories: that is omission of ST words and omission of ST segments. The first subcategory includes all those words with high information relevance, the deletion of which changes the speaker's communicative intent. This kind of omission "gives universal significance to and therefore badly distorts the ST message" (Altman 1994: 29). The second subcategory, namely omission of ST segments, refers to the omission of clauses, phrases or even whole sentences which are either highly informative or rhetoric.

II Substitutions

This error category involves the change by means of synthesis or the paraphrasing of one or more clauses, or even sentences, and their subsequent replacement with completely new ideas. This kind of change may result in contradictions, ambiguous statements and misinterpretations with respect to the ST message (Falbo 1998).

III Additions

This category includes new material that the interpreter adds to the ST in the TT thus changing its meaning: this type of discontinuity is often preceded by omissions of part of a sentence for which the interpreter tries to find a remedy by adding apparently neutral information material, but which often gives a too general an interpretation of the sentence (Russo and Rucci 1997).

IV Logical-Time Sequence Errors

The last evaluation criterion chosen to assess meaning quality in TTs refers to the interpreter's ability to properly reproduce in the TT the logical relation among clauses, phrases or sentences of the ST. Moreover, this criterion also concerns the interpreter's ability to respect the time sequence of information material presented in the ST. Each variation in the logical-time sequence changes the ST message and represents an alteration of the speaker's communicative intentions.

In this experimental study, Riccardi's (2001) categories were used to analyse the proper reproduction or the distortion of the logical-time relation of ST information units in the TT.

This category is divided into two subcategories: Logical Sequence Errors are discontinuities that either do not respect the logical relation between ST information units in the TT or simply alter it, giving rise to new relations among clauses or phrases in the TT which were not connected in the ST; Time Sequence Errors include verb tense and mode errors as well as changes of time references, days and years. This kind of error alters the ST meaning.

The categories used to examine interpretation fluency are the following:

I Pronunciation/Phonation Errors

Some investigations on delivery rate, among which Gerver's study (1971) deserves special attention, showed that ST rate manipulation may induce interpreters to increase their own articulation rate and the number of their deviations from standard pronunciation and phonation.

This category includes errors made by the interpreters in standard pronunciation and phonation.

II Unfilled pauses

A tendency interpreters seem to have when translating STs delivered at a high rate is to lengthen their pause time, so as to fully understand the

speaker's message and to summarise it in their translation, and to decrease their speech time (Gerver 1971). This choice may result in longer and a greater number of pauses which may be unpleasant in terms of fluency. This means that the number of long lasting unfilled pauses is expected to be higher in FTTs compared to STTs.

A long lasting unfilled pause is defined in this study as a silence between two speech sequences lasting more than 3 seconds. Long lasting silences in TTs missing in the ST may reveal the interpreters' difficulty in performing their tasks (Déjean Le Féal 1980). In order to assess whether high SL delivery rate and the increase in pause quantity and duration in the TT could be directly related, Riccardi's (1999) evaluation criteria regarding pauses were considered. The examined unfilled pauses belong to the category of "non grammatical" pauses, which are the expression of poor perception and/or reformulation problems during the performance of the interpreting task. Among these problems high ST delivery rate plays an important role.

For this category the total amount of pauses and their average length per subject and per TT as well as the time of the longest pause for each participant were recorded. The same analysis was done for the pauses in the two STs in order to assess the effect of ST delivery rate and subsequently of the amount of pauses made by the speaker upon the interpreter's performance.

### III Filled pauses (or hesitations), repetitions, corrections and false starts

High ST delivery rate results in greater information density which causes a decrease in the time the interpreter needs to adequately carry out the mental operations involved in the SI process. This means that when performed in difficult conditions the interpretation task becomes highly stressful and causes an increase in manifestations such as filled pauses or hesitations, repetitions, corrections and false starts which undermine the interpretation quality in terms of delivery fluency.

This category was examined according to the definitions given by Magno Caldognetto et al. (1982):

- a) Filled pauses are defined as vocalised hesitations like *eh*, *ehm*, *mmm*. Since the measurement of their length lied outside the focus of the present study, the total number and average number of filled pauses recorded for each subject were considered.
- b) Repetitions occur when, usually after a pause, a word segment, a whole word or a sentence segment are repeated without having rhetorical or stylistical significance.
- c) Corrections occur when the translation of a sentence is interrupted and, after a pause, its translation is started again with a change in the translation strategy but without modifying the meaning of the translation.



- d) False starts occur when the interpreter interrupts the translation of a sentence and starts the translation of the following one. This phenomenon often results in misinterpretations and deviations in the logical coherence of the ST message.

A further analysis was carried out with respect to

#### IV Ear-Voice Span

The thread running through the studies devoted to the relationship between quality in SI and SL delivery rate is ear-voice span. According to Gerver (1971), the most common reaction an interpreter seems to have when faced with rapidly delivered STs is to increase his/her distance from the speaker. Therefore, the aim of this study was to assess whether Gerver's (1971) statement on the general trend of interpreters with respect to EVS when coping with rapidly delivered STs could be confirmed or not.

For this purpose the EVS in both texts was measured considering the initial distance between the original and the translation in those passages where the speaker made short interruptions. The interruptions or silences of the speaker in the FST were reduced in number and had a rather limited duration which ranged from 1 to 2.5 seconds. As a rule, these silences (or unfilled pauses) accompanied syntactic pauses which were used to stress the beginning of a new paragraph. The recording of the SI performance by each subject (students and professionals alike) was listened to three times and each time the EVS was measured. The EVS resulted from the arithmetic mean of each data collection.

Although clearly separated for analysis purposes, these error categories are actually closely interdependent and related in terms of mutual influence. This interrelation is particularly evident for error categories regarding meaning<sup>5</sup>.

### 3. Results

The errors recorded in the TTs are illustrated with some examples taken from the subjects' FST performances. The errors are graphically shown as follows:

Omissions: omitted words and phrases of ST passages in the TT are written in bold character and italics in the ST and marked in the TT with the letter "O" in brackets.

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5 The above-mentioned error categories were analysed both in FTT and in STT. The present article highlights only examples taken from FTT performances. A detailed reporting of this categories may be found in the writer's unpublished dissertation: Pio S. (2001), "*La Relazione fra Velocità di Presentazione e Qualità nell'Interpretazione Simultanea*", Trieste, SSLMIT, Università degli Studi.

Substitutions: in the ST the substituted passage is written in bold character and italics, while in the TT it is underlined and followed by the letter "S" in brackets.

Additions: the added text portion in the TT is underlined and followed by the letter "A" in brackets.

Logical-Time Sequence Discontinuities: the modified ST passage in the TT in terms of logical sequence and time sequence is written in bold type and italics in the ST and underlined in the TT followed by the letter "L" or "T" in brackets.

The following sections show the results recorded for each error category referring both to TT meaning (linguistic categories) and to TT delivery fluency (extra-linguistic categories).

### 3.1. Linguistic Categories

#### 3.1.1 Omissions

The following table shows the amount of omissions recorded for each student and each professional both in FTTs and STTs.

*Word Omissions:*

FTTs		STTs	
Students	Professionals	Students	Professionals
S. 1/1→1	P. 1/1→0	S. 1/1→0	P. 1/1→1
S. 2/1→2	P. 2/1→1	S. 2/1→2	P. 2/1→1
S. 3/1→1	P. 1/2→1	S. 3/1→2	P. 1/2→0
S. 1/2→3	P. 2/2→3	S. 1/2→1	P. 2/2→1
S. 2/2→2	P. 3/2→1	S. 2/2→1	P. 3/2→0
S. 3/2→2		S. 3/2→0	
S. 4/2→1		S. 4/2→1	
S. 1/3→1		S. 1/3→1	
S. 2/3→2		S. 2/3→0	
S. 3/3→1		S. 3/3→0	
Tot. Stud.	Tot. Prof.	Tot. Stud.	Tot. Prof.
16	6	8	3
Average per Stud.	Average per Prof.	Average per Stud.	Average per Prof.
1.6	1.2	0.8	0.6

Table 1. Word Omissions in FTTs and STTs.

Both students and professionals doubled the number of word omissions in FTTs.

Most words omitted by student and professional interpreters were qualifying adjectives with high informative value. The deletion of these words almost changed the meaning of some ST passages.

The number of word omissions recorded in the FTTs was two times the amount of words deleted in the STTs.

The following excerpt exemplifies the type of word omission contemplated in the present error subcategory:

<p><b>Ex 1:</b> [...] auf <i>deutsch-italienische</i> Initiative hin hat die Regierungskonferenz außerdem den Rahmen für die Zeit nach Nizza abgesteckt [...]</p>	<p><b>S.2/1:</b> [...] su iniziativa <b>(O)</b> tedesca quindi la conferenza intergovernativa ha fissato il calendario del dopo Nizza [...] ['starting from a German initiative, the inter-governmental conference set the agenda of the Post-Nice Process']</p> <p><b>S.1/2:</b> [...] su iniziativa dell'Italia <b>(O)</b> la conferenza dei capi di governo <i>eh</i> ha chiarito <b>(O)</b><sup>6</sup> che la discussione sull'Europa dovrà continuare [...] ['starting from an Italian initiative, the conference of Heads of Government established that the debate on Europe shall go on']</p>
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In the above deliveries one component of the qualifying adjective *deutsch-italienisch* [German-Italian] was omitted thus totally changing the meaning of the ST.

*Segment Omissions:*

FTTs		STTs	
Students	Professionals	Students	Professionals
S. 1/1→7	P. 1/1→4	S. 1/1→2	P. 1/1→4
S. 2/1→6	P. 2/1→5	S. 2/1→2	P. 2/1→2
S. 3/1→10	P. 1/2→3	S. 3/1→8	P. 1/2→1
S. 1/2→12	P. 2/2→1	S. 1/2→5	P. 2/2→1
S. 2/2→8	P. 3/2→12	S. 2/2→6	P. 3/2→5
S. 3/2→7		S. 3/2→4	
S. 4/2→6		S. 4/2→2	
S. 1/3→12		S. 1/3→8	
S. 2/3→0		S. 2/3→0	
S. 3/3→6		S. 3/3→0	
Tot. Stud.	Tot. Prof.	Tot. Stud.	Tot. Prof.
74	25	37	13
Average per Stud.	Average per Prof.	Average per Stud.	Average per Prof.
7.4	5	3.7	2.6

Table 2. Segment Omissions in FTTs and STTs.

6 This omission belongs to the second subcategory.

Due to the high delivery rate of the FST, both subject categories doubled the number of segment omissions in their interpreting performance. The following are excerpts taken from the FTT:

<p><b>Ex 2:</b> Nach der Schaffung des finanziellen Rahmens <i>durch die Agenda 2000 unter deutscher Präsidentschaft</i> hat die Europäische Union die <i>zweite und damit letzte noch ausstehende Vorabbedingung</i><sup>7</sup> für die Beitritte neuer Mitglieder erfüllt.</p>	<p><b>S.1/1:</b> [...] con la creazione de <i>eh</i> de del delle condizioni finanziarie <i>eh</i> (O) con la presidenza tedesca <i>eh</i> l'Unione Europea è: riuscita a creare le (O) condizioni per l'ampliamento [...]          ['with the creation of the financial premise under the German Presidency, the European Union laid the foundations for enlargement']</p> <p><b>S.1/2:</b> [...] l'Agenda 2000 (4.30) (O) aveva creato le condizioni (O) per l'adesione di nuovi candidati [...]          ['Agenda 2000 laid the foundations for the accession of new countries']</p>
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In this example the prepositional phrase and the attributive phrase were deleted and two information units referring to the achievements reached during the German Presidency and by the EU itself were omitted.

<p><b>Ex 3:</b> Ich bin am Tag vor dem Beginn des Gipfels in Nizza sehr bewusst zu unseren polnischen Nachbarn und Freunden nach Warschau gefahren. Gemeinsam haben wir da an das Lebenswerk von Willy Brandt erinnert. <i>So wie Adenauer der Architekt der Aussöhnung ähm mit unseren westlichen Nachbarn war</i>, so ist die Öffnung der Europäischen Union nach Mittel- und Südosteuropa ohne die Friedenspolitik Willy Brandts nicht denkbar.</p>	<p><b>S.1/2:</b> [...] durante il vertice di Nizza avevamo insieme ai nostri <i>eh</i> partner discusso come già avvenne <i>eh</i> con Adenauer e: naturalmente (O) la situazione attuale non sarebbe stata possibile senza l'opera di Willy Brandt [...]          ['during the Nice Summit, we discussed with our partners as we had done with Adenauer, and of course the current situation would not have been possible without Willy Brandt's engagement']</p>
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In the above example, the first element of the comparison was deleted thus changing the ST's meaning and the speaker's communicative intent.

The total amount (including omissions made by both students and professionals) of words omitted in the FTTs in percentage was 6.1% vs. 3.0% in the STTs. The total amount of segment omissions in the FTTs was 27.5% vs. 13.8% in the STTs. In both cases the number of omissions doubled in the FTTs with respect to the STTs.

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<sup>7</sup> This word was mispronounced by the reader.

## 3.1.2. Substitutions

The following table shows the amount of substitutions recorded for each student and each professional both in FTTs and STTs.

FTTs		STTs	
Students	Professionals	Students	Professionals
S. 1/1→4	P. 1/1→2	S. 1/1→5	P. 1/1→1
S. 2/1→2	P. 2/1→4	S. 2/1→2	P. 2/1→6
S. 3/1→9	P. 1/2→0	S. 3/1→6	P. 1/2→0
S. 1/2→4	P. 2/2→2	S. 1/2→3	P. 2/2→1
S. 2/2→5	P. 3/2→2	S. 2/2→2	P. 3/2→4
S. 3/2→5		S. 3/2→4	
S. 4/2→5		S. 4/2→5	
S. 1/3→3		S. 1/3→2	
S. 2/3→8		S. 2/3→8	
S. 3/3→3		S. 3/3→4	
Tot. Stud.	Tot. Prof.	Tot. Stud.	Tot. Prof.
48	10	41	12
Average per Stud.	Average per Prof.	Average per Stud.	Average per Prof.
4.8	2	4.1	2.4

Table 3. Substitutions in FTTs and STTs.

The findings on the quantity of substituted ST material show that whereas students made slightly more substitution errors in the FTT, professional interpreters made slightly more substitution errors in the STT. However, the difference among individual performances has to be considered as well. There were indeed some subjects who made more substitutions than others in both TTs such as subjects S.3/1, S. 2/3 and P. 2/1.

High delivery rate caused the interpreters' delay in the processing of the previous information unit. By lagging too far behind, they were not able to completely elaborate the following message unit. Indeed, the interpreters could retrieve only a part of the ST passage and tried to build up a logical message even though often without success, as show the following examples.

**Ex 4:** *Ich bin am Tag vor dem Beginn des Gipfels in Nizza sehr bewusst zu unseren polnischen Nachbarn und Freunden nach Warschau gefahren. Gemeinsam haben wir da an das Lebenswerk von Willy Brandt erinnert.*

**S.2/3:** [...] all'inizio di Ni:zza ehm diciamo c'erano comunque stati dei dubbi riguardo alla nostra cooperazione con eh la Polonia e comunque oggi ehm stiamo andan cercando di proseguire sulla strada di ciò che era già stato fatto da Willy Brandt [...] (S)  
[at the beginning of the Nice Summit there were some doubts on our cooperation with Poland and today we are trying to follow Willy Brandt's suggestions']

This example belongs to Barik's (1994) category known as "gross phrasing change" in which:

The T [translator] seems to make up something on the basis of some part of the text. This may be due to his lack of comprehension of what is said, or because of his lagging too far behind the S [speaker], which prevents him to fully understand what the S has said, and he consequently tries to "fib" his way through the text on the basis of some word in it (1994: 131).

<p><b>Ex 5:</b> Nicht zuletzt deshalb weiß Deutschland um seine besondere Verantwortung für das Gelingen des Erweiterungsprozesses und <i>die Partner und Freunde in Mittel- und Osteuropa können also auf uns zählen</i></p>	<p><b>P.2/1:</b> [...] di fatto la: Germania si è presa le responsabilità per l'unificazione e è <u>grazie a questi sforzi che o:ra i paesi dell'Europa centro orientale possono essere tra i candedati (S)</u> [...] [indeed Germany assumed its responsibility with regard to unification and thanks to this engagement countries in South Eastern Europe are now applicant countries]</p>
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The text portion highlighted in example 5 was replaced by a completely new piece of information which altered the ST meaning.

The total amount of substitutions (including substitutions made by both students and professionals) recorded in the FTTs was 16.1% vs. 14.7% in the STTs. The difference between these two findings is rather limited. This shows that the increase of substitution errors in FTTs is linked to rate variation only to a small extent.

### 3.1.3. Additions

The following table shows the average number of additions recorded for each student and each professional both in FTTs and STTs.

	Average Amount of Additions	
	FTT	STT
STUDENTS	0.2	0.2
PROFESSIONALS	0	0.6

Table 4. Average Amount of Additions in FTTs and STTs.

The small number of additions recorded and the small difference between their amount found in the FTTs and in the STTs show that the variation of delivery rate may have had a limited impact upon the number of additions made by the subjects.

The following example illustrates the most common type of addition recorded:

<p><b>Ex 6:</b> Wir brauchen also eine europäische Öffentlichkeit und dafür müssen wir neue Formen der Beteiligung und der politischen Debatte finden.</p>	<p><b>S.1/2:</b> [...] dobbiamo preparare in un dibattito che preveda una maggiore partecipazione dei <u>vari stati</u> (A) [...] ['we have to start a debate which involves several countries']</p> <p><b>S.3/3:</b> [...] ed è per questo che noi dobbiamo trovare la possibilità di discutere sia a livello politico che a <u>livello economico</u> (A) [...] ['for this reason we have to find the possibility to debate both at political and at economic level']</p>
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This kind of addition matches with Barik's (1994) category known as "*closure additions*", by which the interpreter tries to find a remedy for a previous omission by adding neutral information.

The total percentual amount of additions (including additions made by both students and professionals) found in STTs was larger than the total percentage of additions recorded in FTTs, namely 1.4% vs. 0.6%.

#### 3.1.4. Logical-Time Sequence Errors

##### *Logical Sequence:*

The following table shows the average number of logical sequence errors recorded for each student and each professional both in FTTs and STTs.

	Average Amount of Logical Sequence Errors	
	FTT	STT
Students	1	0.7
Professionals	1	0.4

Table 5. Average Amount of Logical Sequence Errors in FTTs and STTs

Professionals doubled the number of logical sequence errors in the FTT, with an average increase of 0.6 occurrences per subject, whereas students made on average 0.3 logical sequence errors more in the FTTs.

The following example illustrates the type of logical sequence error made by the subjects. In this case the relation between the two information units has been overturned:

<p><b>Ex 7:</b> <i>Unsere Nachbarn in Mittel und Osteuropa haben die deutsche Einigung von Beginn an mit Sympathie begleitet .</i></p>	<p><b>S.1/2:</b> [...] <u>i nostri alleati nell'Europa centro orientale sono stati accompagnati dal dal governo tedesco</u> (L) [...] ['our allies in South Eastern Europe were accompanied by the German Government']</p>
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*Time Sequence:*

The following table shows the average number of time sequence errors recorded for each student and each professional both in FTTs and STTs.

	Average Amount of Time Sequence Errors	
	FTT	STT
Students	2.1	0.6
Professionals	0.8	1

Table 6. Average Amount of Time Sequence Errors in FTTs and STTs

The results recorded reveal that students made more errors belonging to this subcategory. The most common errors were changes in the time sequence as show the following examples where the future and the present tense in the ST were translated with the past tense in the TT (example 8) and where the past tense in the ST was translated with a present tense (example 9).

**Ex 8:** Erste Vorarbeiten hierfür *werden* schon unter schwedischem Vorsitz *beginnen* der hierfür unsere volle Unterstützung *hat*

**Ex 9:** Herr Präsident meine sehr verehrten Damen und Herren der Europäische Rat von Nizza *hatte* ein überragendes

**S.3/2:** [...] questo processo è iniziato già (**T**) sotto la *eh* presidenza svedese che ha goduto (**T**) del nostro pieno appoggio [...]  
[‘this process started under the Swedish Presidency which we fully supported’]

**P.2/1:** Signor Presidente Signore e Signori il Consiglio Europeo di Nizza ha: (**T**) un obiettivo fondamentale [...]  
[‘Mr President, ladies and gentlemen, the European Council of Nice has a fundamental objective’]

Students made largely more time sequence errors in FTTs than in STTs. In professionals' performances, the difference between FTTs and STTs in terms of time sequence errors is rather small, even though professionals made slightly more time sequence errors in STTs.

The total percentual amount of logical sequence errors (including logical sequence errors made by both students and professionals) was 4.2% in FTTs vs. 2.5% in STTs, while the total amount of time sequence errors (including time sequence errors made by both students and professionals) was 6.9% in FTTs vs. 3.0% in STTs.

#### Extra-linguistic Categories

Another aim of this study was to assess those aspects related to fluency that could be mostly influenced by high SL delivery rate. As a result, deviation from



standard pronunciation and phonation, unfilled pause quantity and length as well as filled pauses, false starts, repetitions and corrections were examined since their excessive presence in the TT may be highly detrimental to the interpreter's performance in terms of delivery fluency. The results relating to these categories are shown in the following sections.

### 3.2.1. Pronunciation and Phonation

The following table shows the total number of pronunciation and phonation deviations recorded in students' and professionals' FTT and STT performances.

	Total Amount of Pronunciation and Phonation Deviations	
	FTT	STT
Students and Professionals	13	8

Table 7. Total Amount of Pronunciation and Phonation Deviations in FTTs and STTs

The analysis of the taped performances revealed that this phenomenon was not very common. Interpreters accelerated their articulation rate in the utterance of FTT information units but they did not make many errors belonging to this category. However, the total amount of deviations recorded for this category was slightly larger in FTTs than in STTs.

The following examples highlight this phenomenon:

- [...] l'unificazione europea è di fondamentale *importanz* (correct pronunciation: *importanza*) [...] [S. 3/1]
- [...] i cittadini chiederanno chi e su quali basi prende decisione per *liore* (correct pronunciation: *loro*) [...] [S. 3/2]
- [...] possono essere tra i *candedati* (correct pronunciation: *candidati*) [...] [P.2/1].
- [...] le relazioni tra istituzioni europee e parlamenti nazionali e *re[g]ioni* (this sound was pronounced following the German pronunciation) [...] [S. 1/3].

The above figures relating to this category show that pronunciation and phonation were slightly altered in the TTs without causing series disturbance.

## 3.2.2. Unfilled Pauses

The following table shows the results referring unfilled pauses recorded for each student and each professional interpreter in FTTs and STTs as well as the total number of unfilled pauses in the SST and in the FST.

FST											2	
SST											14	
STUD.	S.1/1	S.2/1	S.3/1	S.1/2	S.2/2	S.3/2	S.4/2	S.1/3	S.2/3	S.3/3	TOT.	AVERAGE
FTT	3	5	8	12	4	7	1	8	0	1	49	4.9
STT	2	4	10	5	3	3	1	9	0	0	37	3.7
PROF.	P. 1/1		P. 2/1		P. 1/2		P. 2/2		P. 3/2		TOT.	AVERAGE
FTT	1		2		2		0		1		6	1.2
STT	2		2		1		0		0		5	1

Table 8. Unfilled Pauses in FST, SST, FTTs and STTs

The results relating to this category show the total amount unfilled pauses recorded in FTTs is higher than the one recorded in STTs, respectively 55 and 42 occurrences. The average length of unfilled pauses measured per subject in the FTT was 4.53 seconds vs. 3.94 seconds recorded in the STT. These results are of course strongly influenced by the amount of pauses recorded for some subjects who made visibly more unfilled pause than others, such as subjects S. 1/2, S. 3/1 and S. 1/3.

The difference between the amount of unfilled pauses made by the two subject categories is rather striking. Students made on average 4.9 pauses in FTTs vs. 3.7 in STTs, whereas professionals made on average 1.2 unfilled pauses in FTTs vs. 1 in STTs. Moreover, while the difference between the results referring to FTTs and STTs for professionals is rather reduced, on the contrary students made considerably more unfilled pauses in FTTs. This fact shows that with regard to the category of unfilled pauses students were influenced by fast ST delivery rate to a large extent.

## 3.2.3. Filled Pauses, Repetitions, Corrections and False Starts

The tables below show the total number and the average number of occurrences recorded for every subcategory as well as for each student and each professional interpreter in both TTs.

STT		Filled Pauses		Repetitions		Corrections		False Starts	
Stud.	Prof.	Stud.	Prof.	Stud.	Prof.	Stud.	Prof.	Stud.	Prof.
S. 1/1	P. 1/1	49	6	2	1	13	12	0	0
S. 2/1	P. 2/1	4	21	9	0	14	6	0	0
S. 3/1	P. 1/2	24	9	4	0	10	5	0	0
S. 1/2	P. 2/2	4	5	1	1	11	6	1	0
S. 2/2	P. 3/2	8	14	4	2	2	27	0	0
S. 3/2		5		1		10		0	
S. 4/2		3		0		3		1	
S. 1/3		12		0		15		3	
S. 2/3		33		1		8		0	
S. 3/3		20		6		8		0	
Average		16.2	11	2.8	0.8	9.4	11.2	0.5	0

Table 9. Occurrences in STTs.

FTT		Filled Pauses		Repetitions		Corrections		False Starts	
Stud.	Prof.	Stud.	Prof.	Stud.	Prof.	Stud.	Prof.	Stud.	Prof.
S. 1/1	P. 1/1	36	8	4	1	14	15	0	0
S. 2/1	P. 2/1	13	32	0	3	11	6	0	0
S. 3/1	P. 1/2	34	10	4	1	13	8	1	0
S. 1/2	P. 2/2	4	6	2	0	5	6	0	0
S. 2/2	P. 3/2	13	14	0	2	7	28	0	0
S. 3/2		6		0		10		0	
S. 4/2		5		0		9		0	
S. 1/3		21		6		16		3	
S. 2/3		36		1		11		0	
S. 3/3		29		4		8		0	
Average		19.7	14	2.1	1.4	10.4	12.6	0.4	0

Table 10. Occurrences in FTTs.

Data on the average number of occurrences, including students and professionals, recorded for all four subcategories revealed that as a general trend slightly more filled pauses and corrections were recorded in FTTs. False starts were more or less the same in both TTs while repetitions were slightly higher in STTs.

On average students made 19.7 filled pauses in FTTs vs. 16.2 in STTs, while professionals made 14 and 11 filled pauses respectively. The average number of repetitions recorded for students in FTTs was slightly smaller than the one recorded in STTs, namely 2.1 vs. 2.8 occurrences respectively. Professionals made on average 1.4 repetitions in FTTs vs. 0.8 in STTs. The amount of corrections found in FTTs and in STTs was higher for professionals than for students, on average 12.6 in FTTs vs. 11.2 in STTs for professionals and 10.4 in

FTTs vs. 9.4 in STTs for students. As regards false starts, both subject categories made more or less the same number of false starts in both TTs, that is 0.4 and 0.5 per student and 0 for professionals in FTTs and STTs respectively.

The number of occurrences recorded for these evaluation categories show that some subjects used such extra-linguistic categories more often than others.

### 3.2.4 Ear-voice span (EVS)

The tables below show the EVS used by both subject categories in both TTs and highlight those subjects who increased their EVS in FTTs and STTs:

STT			
Students	EVS	Professionals	EVS
S. 1/1	2.74	P. 1/1	3.61
S. 2/1	3.58	P. 2/1	3.23
S. 3/1	3.19	P. 1/2	3.11
S. 1/2	2.88	P. 2/2	2.01
S. 2/2	3.37	P. 3/2	4.09
S. 3/2	3.40		
S. 4/2	2.96		
S. 1/3	3.81		
S. 2/3	2.51		
S. 3/3	3.23		

Table 11. EVS in STTs. Measurement in seconds.

FTT			
Students	EVS	Professionals	EVS
S. 1/1	3.25	P. 1/1	2.44
S. 2/1	2.79	P. 2/1	3.68
S. 3/1	3.59	P. 1/2	3.86
S. 1/2	3.35	P. 2/2	2.08
S. 2/2	3.12	P. 3/2	3.76
S. 3/2	2.95		
S. 4/2	2.54		
S. 1/3	2.90		
S. 2/3	2.86		
S. 3/3	3.72		

Table 12. EVS in FTTs. Measurement in seconds.

Data revealed that 8 subjects out of 15 lengthened their EVS in FTTs, whereas 7 shortened it. 5 subjects out of 8 were students whereas 3 were professional interpreters.

The EVS increase in the performances of these 8 subjects was rather reduced and ranged from a minimum of 0.07 seconds to a maximum of 0.75 seconds; whereas the EVS decrease of the SIs of the 7 participants who used the opposite strategy ranged from a minimum of 0.25 seconds to a maximum of 1.17 seconds.

#### 4. Discussion

The analysis of the results regarding the error categories used to shed light on the possible impact that SL delivery rate variation could have upon the interpreter's performance in terms of TT meaning (linguistic deviations) and TT delivery fluency (extra-linguistic deviations) are illustrated in the following sections.

##### 4.1. Linguistic Categories

The following table summarises the total amount of errors (including both students and professionals) recorded both in FTTs and STTs and referring to all linguistic categories. With the exception of additions it would seem that there may be a general trend to make more linguistic errors in FTTs compared to STTs. This fact would in part confirm Gerver's statement according to whom

The principal effect of increasing delivery rate is to increase the number of discontinuities in all categories (1971: 182).

Error Category		Ftt	Stt
Word	Omissions	22	11
Segment		99	50
Substitutions		58	53
Additions		2	5
Logical	Sequence	15	9
Time		25	11

Table 13. Total number of occurrences referring to linguistic errors in both TTs.

However, results revealed that there is above all one error category which is mostly influenced by fast ST delivery rate, namely omissions which may in turn cause further errors.

The chart below shows the total amount of errors in percentage recorded for all semantic error categories in both TTs:

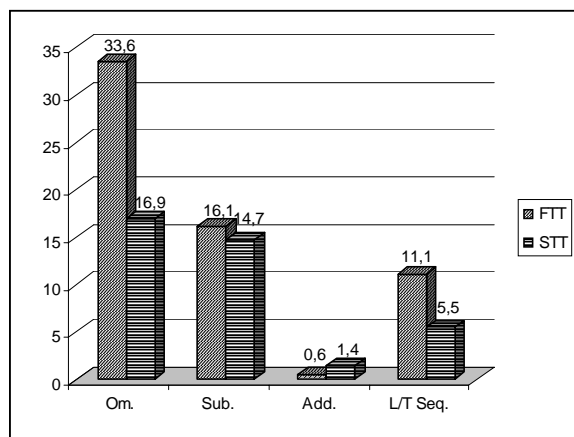


Chart 1. Linguistic errors in percentage.

Omissions in the interpreters' performance may be seen as the direct result of high SL delivery rate with 121 occurrences and a total percentage of 33.6% in FTTs vs. 61 occurrences, i.e. 16.9%, in STTs. The large difference between these two figures, i.e. 17%, is the most striking one if compared with the difference between the percentage of errors belonging to other categories in the two TTs. This confirms that increasing SL delivery rate may have induced interpreters to double omissions in FTTs compared to STTs. The analysis of the questionnaires filled up by the subjects, in which they were asked to judge their own performance and to report which type of mistake they believed to have made more often in their performances, showed that only 8 interpreters out of 15 mentioned involuntary omissions as the more frequent mistake made in FTTs. The detailed evaluation of the performances by the other 7 subjects shows that, with the exception of one subject, all participants, students and professionals alike, made more omissions in the FTTs. This proves that the interpreters' subjective impressions on their performance quality do not match with the actual quality result.

The small difference between FTTs and STTs in terms of substitution occurrences (i.e. 1.4%) makes it rather difficult to state that this difference may be due to fast delivery rate. Nevertheless, 15 substitutions out of 58 recorded in FTTs were closely related to omissions, thus accounting for 13.5% (vs. 6 out of 53 in STTs, i.e. 5.4%). This confirms that delivery rate, undermined the SI process in its reception phase and prevented interpreters from fully elaborating information conveyed in a whole sentence or information unit. This difficulty resulted in the omission of some parts of the information unit around which the interpreter tried to produce a plausible message using generalisation. Sometimes

this choice brought about contradictions that changed the ST message's meaning, as shown in the following examples.

**Ex. 10**

**FST:** Er hat den Grundstein dafür gelegt, dass heute in Europa, wie er es in einem anderen Zusammenhang einmal formuliert hat, zusammenwachsen kann was zusammengehört. *Unsere Nachbarn in Mittel und Osteuropa haben die deutsche Einigung von Beginn an mit Sympathie begleitet. Ohne ihre Mithilfe wäre sie wohl erst viel später und unter sehr viel schwierigeren Bedingungen Wirklichkeit geworden.*

**S. 3/3:** [...] le basi sono state da lui gettate e sicuramente *ehm* possiamo parlare ancora oggi della sua frase ossia di lasciar crescere insieme ciò che *eh* appartiene ciò che si appartiene sicuramente **(O)** senza l'aiuto e la strutture dell'Unione Europea nessuno avrebbe potuto realizzare questa politica questo concetto **(S)**

[he laid the foundations and today we may talk about his statement, that is the fact that we have to promote the growing together of what was originally linked together without the support of the EU nobody would have been able to implement this policy, this idea']

**Ex. 11**

**FST:** Gerade deshalb haben wir uns Nizza und auch davor so hartnäckig und schließlich erfolgreich für eine umfassende Regierungskonferenz eingesetzt. Es ist fair und redlich die **Kandidaten** an der Diskussion über diese und andere Zukunftsfragen und an der Regierungskonferenz 2004 zu beteiligen. Zur Debatte steht nämlich die Ausgestaltung der Europäische Union, der auch **diese Länder** in wenigen Jahren angehören werden.

**S. 3/3:** [...] è per questo che noi *eh* abbiamo intenzione di partecipare con altre domande con altri idee *eh* alla conferenza del 2004 **(O)** in particolare per quanto riguarda anche i paesi dell'Unione Europea **(S)** perché anche questi in pochi anni entreranno a far parte della famiglia europea [...]

[therefore we want to take part at the conference in 2004 and debate further issues especially as far as EU states are concerned because in a few years they will belong to the European family']

With regard to additions, most of the records relating to this category were not detrimental to the conveying of information. The total amount of additions of new informative material recorded in TTs is rather small, namely 2 occurrences in FTTs vs. 5 in STTs. This shows that the amount of additions was not influenced by FST delivery rate. The only 2 additions made in FTTs were preceded by omissions. This fact confirms once more that high ST delivery rate

may lead to an increase in omissions in the TT which interpreters tried to find a remedy for by adding neutral or general informative material, but which often resulted in alterations of the ST message.

Differently from the previously mentioned linguistic error categories, discrepancies in the logical-time sequence may be considered as a phenomenon deriving directly from ST delivery rate rather than from omissions: the total amount of discontinuities recorded for this category in FTTs was 11.1% vs. 5.5% in STTs. The difference between the two TTs was 5.6% and thus higher than the one recorded for substitutions (i.e. 1.4%). However, there is a difference between logical sequence errors and time sequence errors. The total amount of time sequence errors recorded in FTTs was 25, more than twice the amount recorded in STTs. Errors in the logical sequence in FTTs were 15 vs. 9 in STTs, with a difference of 6 occurrences. This shows that time sequences errors may be considered as the direct outcome of FST delivery rate. Interpreters probably had less time at their disposal to segment information units and connect them according to the ST's time sequence, thus several verb tense and mode mistakes which changed the ST meaning were recorded. In figures, the difference of errors recorded for this subcategory in the two TTs was 3.9%, with 6.9% recorded in FTTs vs. 3.0% in STTs.

The different reaction between students and professionals coping with fast STs in terms of linguistic errors is highlighted in the following charts.

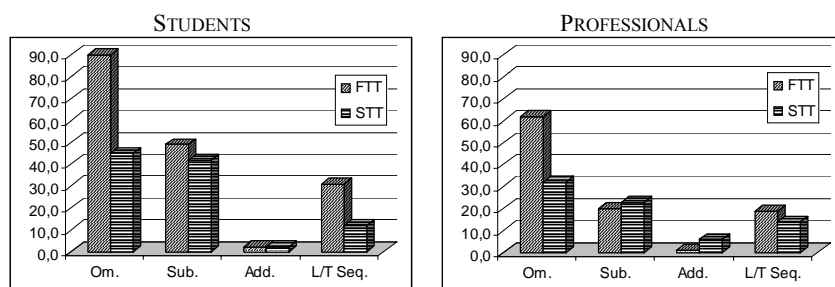


Chart 2. Discontinuities recorded in the two TTs and for both subject categories in percentage terms.

Students and professionals alike doubled the number of omissions in FTTs compared to STTs. The average amount of omissions recorded in FTTs per participant was higher for students than for professionals. Similarly, the difference between the total amount of informative material deleted in both TTs was higher in students' performances. This fact confirms the starting hypothesis of the present study, according to which thanks to their expertise and to the



automatisation of various abilities, professional interpreters are more likely to overcome contextual difficulties such as high ST delivery rate in comparison to students.

These results show that ST rate (and subsequently information density) influenced the SI performance in terms of omissions and that the amount of examples recorded for this category may be a direct consequence of delivery rate. These results match with Barik's (1994) statement, according to which

[...] the more the speaker speaks in a fixed period of time, the more often and greater the amount of material that is likely to be omitted by the T [translator] (1994: 132).

With regard to substitutions, students substituted more informative material than professionals in FTTs and STTs alike. The small difference of total occurrences recorded in both types of performances and for both subject categories shows that SL rate seemed to have a limited direct impact on this type of error for both subject categories. It was rather the large amount of omissions that caused the manifestation of substitutions.

The results on logical-time sequence errors in TTs show that this category was directly influenced by high ST delivery rate. Indeed, although students and professionals made nearly the same amount of logical sequence errors in both TTs, the number of occurrences recorded per participant with regard to time sequence deviations in FTTs was visibly higher for students than for professionals. The reason for the increase of errors belonging to this subcategory may be due to the fact that the fast delivery rate reduced the students' time to segment information strings and to establish the right time relation among them.

In brief, the analysis of the SI performances of the two subject categories revealed that students had visibly greater problems in translating a ST delivered at high rate.

#### 4.2. Overlapping error categories

As mentioned at the beginning of the present article, despite the fact that error categories may be separated for evaluation purposes their interdependence must be considered as well. The analysis of the interpreters' performances, of students and professionals alike, put in evidence the overlapping of different error categories. The occurrences belonging to this phenomenon were analysed separately.

Findings showed that SL delivery rate may not have the same impact on every error category, but rather on one type, namely omissions. The deletion of highly informative ST material may cause in its turn further errors such as

substitutions (the majority of substitutions recorded may be seen as the consequence of omissions), in form of contradictions, ambiguous statements or misinterpretations, and logical sequence errors which changed the logical relation that linked ST information strings. Additions and time sequence variations were hardly involved in this overlapping phenomenon. The total amount of overlapping error categories recorded in FTTs more than doubled with respect to STTs (i.e. 24 vs. 9 occurrences respectively). This increase may be considered as the result of the fast SL delivery rate that interpreters had to cope with. This confirmed that in terms of linguistic errors, increasing delivery rate goes hand in hand with the increase of omissions. Indeed, as Gerver maintained that:

The interpreter, having to cope with larger units before being able to translate, finds that as the intervals between items become shorter than the time taken to process them, [...] he appears to opt for a strategy of working in bursts and must lengthen pause times in order to do so. The extra time thus made available should enable him to cope with the increasing backlog of material in short-term store, but items in store accumulate and deteriorate faster than the interpreter can cope, in fact, his performance falls off (1971: 182).

Another aspect that may cause the overlapping of error categories is the interpreter's delay in the processing of the previous information unit. The fact that interpreters lagged too far behind the speaker prevented them from fully understanding the message of the following information unit. Thus they said something plausible on the basis of some text portions heard. The result was an overlapping of discontinuities like omissions (due to the interpreter's delay), substitutions (which were the outcome of the interpreter's attempt to restore the information perceived) and deviations in terms of logical sequence (which were due to a wrong connection among information units and incoherent rendition of the ST message).

Of course not all occurrences of overlapping errors involved all the above-mentioned categories at the same time, sometimes only two or three of them overlapped:

**Ex. 12:** Wir Deutschen sind mit der festen Absicht nach Nizza gegangen genau dies zu leisten.

**S.2/1:** [...] noi tedeschi vogliamo dare un contributo fondamentale oggi (O/S/L) [...] ['the Germans want to give an important contribution today']

**Ex. 13:** Ich bin am Tag vor dem Beginn des Gipfels in Nizza sehr bewusst zu unseren polnischen Nachbarn und Freunden nach Warschau gefahren. Gemeinsam haben wir da an das Lebenswerk von Willy Brandt erinnert.

**S.3/1:** [...] prima del vertice a Nizza sono *eh* ero già *ehm* consapevole delle difficoltà da affrontare (O/S/L) e qui ci siamo *ehm* ci siamo avvicinato a quanto affermato dai padri fondatori da Willy Brandt e da Adenauer [...] ['before the Nice Summit I am I was aware of the difficulties we had to face and in this we agreed with the statements of the founders Willy Brandt and Adenauer']

**P.2/1:** [...] *eh* dobbiamo dire quindi chiaramente ai *eh* polacchi ai nostri altri *eh* vicini quello che abbiamo intenzione di fare (O/S/L) Adenauer e gli altri gli altri fondatori dell'Unione Europea avevano un'idea molto chiara che noi ora dobbiamo portare avanti [...] ['we have to tell our Polish neighbours what our intentions are. Adenauer and the other founders of the European Union had a clear objective and today we have to realise this objective']

#### 4.3. Extra-Linguistic Categories

The chart below summarises the total amount of occurrences (including both students and professionals) recorded for each extra-linguistic category in both TTs.

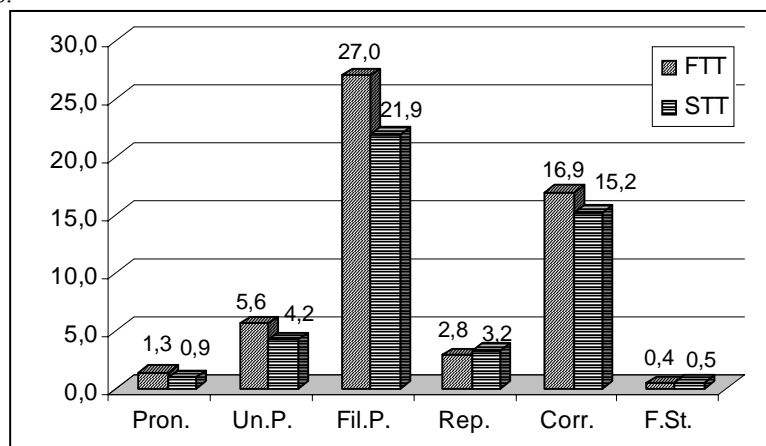


Chart 3: Total amount of extra-linguistic deviations recorded for each category and in both TTs.

The extra-linguistic categories that seem to have been mostly influenced by high SL delivery rate are the following (they are listed from the most recurrent to the least recurrent):

- a) Filled pauses which, with a difference of 5.1% between the amount of occurrences recorded in FTTs and STTs, put in evidence the interpreters' hesitations and doubts during the performance of their SI task.
- b) Unfilled pauses: 85.5% of unfilled pauses lasting more than 3 seconds were related to omissions. This fact once more seems to support Gerver's (1971) theory according to which fast delivery rate and high information density may induce interpreters to make longer pauses in order to fully elaborate the incoming message, but sometimes this choice results in further deletions<sup>8</sup>.
- c) Corrections: the amount of corrections was higher in FTTs than in STTs. Although in this case the individual interpreter's tendency to use such manifestations plays an important role. Indeed, some subjects made more corrections than others.
- d) Pronunciation and Phonation seemed only slightly altered in both TTs and although some more errors were recorded in FTTs they did not undermine the interpreters' performance in terms of fluency. The few deviations recorded may be considered the result of the influence of the SL, namely German, and of a less regular speech flow due to the interpreters' need to increase TT articulation rate because of the ST's high delivery rate.
- e) The amount of false starts recorded in both TTs was rather reduced and similar in both TTs. In particular it was observed that false starts were directly linked to the subjects' attempt to lengthen pause time so as to fully understand the speaker's message and to summarise it. But due to the overload of short-term memory, interpreters interrupted the translation of a sentence and started the translation of the following one.
- f) Repetitions: the total amount of repetitions was slightly higher in STTs.

Looking at the results recorded separately for students and professionals it may be stated that:

- a) Students made more filled pauses both in FTTs and in STTs. This may be due to the fact that they focused their attention mainly on meaning rather than on fluency. Both subject categories made more filled pauses in FTTs thus confirming that increased ST delivery rate influenced their performance in terms of fluency.
- b) Although unfilled pauses in the SST were 14 and pauses in the FST were 2, students made more unfilled pauses in FTTs. These recordings show that

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<sup>8</sup> This strategy sometimes coincided with a longer EVS which in its turn sometimes led to omissions.

pauses done by the speaker in the SST enabled students to have a more regular speech flow in STTs compared to FTTs. With regard to professionals, the difference between the average number of pauses recorded for each professional interpreter in the two TTs is small, whereas the difference concerning the average pause length for each professional interpreter is rather large, namely 1.24 seconds corresponding to 3.71 seconds in FTTs and 2.47 seconds in STTs. This means that unfilled pauses in FTTs lasted more than 3 seconds, whereas in STTs they were below the 3-second threshold.

The total amount of unfilled pauses made by each subject show that the use of pauses is an individual fact. However, although some subjects made few pauses in FTTs and STTs alike, most subjects with a regular speech flow were influenced by high SL delivery rate in terms of number and length of unfilled pauses.

- c) Corrections: students made less corrections than professionals. Even though the total amount of corrections made by all professionals was influenced by the large number of pauses inserted by two professionals. These two subjects had the inclination to make more corrections in both TTs, namely S.1/3 and P.3/2.
- d) Pronunciation and Phonation: students made slightly more pronunciation errors than professionals even though the limited number of occurrences and the reduced difference of occurrences recorded for both subject categories between the two TTs show that students and professionals were influenced to a very small extent by high ST delivery rate with respect to standard pronunciation and phonation.
- e) The amount of false starts recorded for the two subject categories was rather small. Students made on average 0.1 false starts more in STTs. Since this difference is very small it may be stated that the amount of false starts recorded for students in FTTs was the same in STTs. Professionals made no false starts in either of the TTs. This shows that due to their experience in the field of SI, professionals pay more attention to delivery fluency than students.
- f) Repetitions: students made significantly more repetitions in both TTs, although the average amount recorded in the STTs per student was higher than the one recorded in the FTTs. On the contrary, professionals nearly doubled the number of repetitions in FTTs, even though the average amount of repetitions made per professional was very small in both TTs. These findings once more confirm that expertise made the difference, above all in terms of delivery fluency. Indeed, students' FTTs were less fluent than professionals' FTT due to the excessive use of filled pauses and corrections as well as unfilled pauses.

#### 4.4. Ear-Voice Span

With regard to EVS modulation, the present experimental study revealed that given the limited difference between the number of subjects who lagged further behind the speaker and the number of subjects who drew closer to the speaker as input rate increased, it is neither possible to confirm nor to reject Gerver's theory according to which SL delivery rate and EVS increase are directly linked. The fact that nearly the same number of subjects did exactly the opposite reveals that when facing rapidly read out STs, interpreters may tend to lengthen their EVS as well and to shorten their distance from the speaker in order to lose the least information possible and not to undermine their performance in terms of quality. Gerver himself maintained that the strategy of lengthening EVS brings about the storing of too much informative material in short term memory, often causing the overload of the interpreter's processing capacity and the risk of changing the ST's meaning. This results also show that EVS strategy may depend upon the choice of each interpreter to use one or the other approach.

As regards the difference between the two subject categories with regard to EVS, 5 students (that is exactly half of them) increased it in FTTs and 5 used the opposite strategy. 3 professionals out of 5 increased their EVS in FTTs and 2 shortened it. In spite of the fact that half students and the majority of professionals increased their EVS in the SI of STs delivered at fast rate, the average EVS increase per subject measured in seconds was very small. Indeed, each student and each professional increased his/her EVS on average by respectively 0.44 and 0.42 seconds. This rise is rather limited if compared with the data relating to the two groups of subjects who decreased their EVS during their FTT interpretation performance. These students reduced their average EVS by 0.52 seconds and these professionals decreased their EVS by 0.75 seconds. In particular the figures recorded for professionals show that the average amount of seconds referring to the EVS decrease correspond more or less to half the average amount of seconds recorded for the EVS increase. Thus confirming once more that when having to cope with STs delivered at fast rate professionals may tend either to lengthen or to shorten EVS according to the approach they prefer.

In conclusion, this experimental study is meant to be a suggestion and an input for further studies on this topic in order to fill the gap in the research on ST delivery rate and its relation with quality in simultaneous interpretation.

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