

THE INFLUENCE OF SEGMENTAL AND PROSODIC DEVIATIONS ON SOURCE-TEXT COMPREHENSION IN SIMULTANEOUS INTERPRETATION

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It has become more and more customary for a speaker invited to an international conference to hold his speech in a foreign language. Quite inevitably, speakers who do not master the language used often do not manage to present their speech in the most appropriate way from the point of view of linguistic production, thus impeding or constraining comprehension and, therefore, communication. Among the most commonly observable features of speeches of this kind are segmental and prosodic deviations which can sometimes cause severe difficulties for interpreters.

It is the aim of this study to investigate whether and to what extent such source-text (ST) presentation can affect interpreters' comprehension skills and the semantic quality of their rendition in the target-language (TL). For this purpose, a number of interpreters were asked simultaneously to interpret a relatively segmentally and prosodically degraded ST presented by a speaker not using his native language.

1. Orality and simultaneous interpretation

No one, among interpretation scholars, seems so far to have attempted to analyse the influence of segmental and prosodic aspects of ST on interpreters' comprehension skills and target-text (TT) semantic quality.

Above all, it seems that ST has been studied mostly from the point of view of *text linguistics* – in order to emphasize its structural features and relate them to interpretation strategies according to *genre* – but not so much from the point of view of its *linguistic* (segmental and prosodic) realization. Some aspects of ST presentation have actually given rise to ample debates during the years since the beginning of this discipline to the present, but these have been limited to considerations regarding, for example, tempo or the kind of preparation of the speech.

Very few scholars have devoted attention to the relevance of the ST *linguistic* dimension (in the sense explained above).

Pöchhacker (1994) presented a *text delivery profile (parametric grid)* for the assessment of both ST and TT in which discourse characteristics are also considered from the *linguistic* point of view, i.e.: *melodic and rhythmic*

accentuation of speech, voice quality and articulation. This approach is innovative both because of the aspects taken into account and the attempt to establish an explicit relationship between ST and TT from the *linguistic* point of view. Pöchhacker subsequently dwells on the characteristics of the interpreter's text only.

Riccardi (1997), defining some aspects of the variety of language most frequently appearing in the interpreter's work at an international conference – which she defined *conference language* – highlights the importance of prosodic features, insisting on how they enable the interpreter to understand even long parenthetical sentences and clumsily structured utterances. Despite the fact that Riccardi's aim is not to focus on the effects of prosodic deviations on the interpreter's performance, it is quite obvious that she ascribes considerable significance to the prosodic dimension of discourse.

Similarly, Straniero Sergio (1997) maintains that the absence of spontaneous prosodic features may negatively influence ST comprehension. He also draws attention to the role prosody can play when the interpreter is listening to ST and translating it into the target-language (TL). The *linguistic* characteristics of ST presentation are thus of great relevance for him too.

In particular, prosodic features have been an object of research among interpretation scholars only with respect to TT and only with the aim of assessing the interpreter's performance quality. According to most theorists and professional interpreters, good TT prosodic characteristics rank high on the scale of criteria applicable for quality assessment. Among these authors the following should be mentioned: Bühler (1986 and 1989), Altman (1990), Kurz (1993), Marrone (1993), Kopczynski (1994), Pöchhacker (1994) and Schjoldager (1996). All authors, apart from using different definitions for the same phenomena, only refer to the interpreter's text, without considering the *linguistic* features of ST. Well mastered pronunciation and prosody are undoubtedly considered as the interpreter's strategic tools and a sign of his skill but the reasons quoted are not presented systematically and focus only on their *paralinguistic* value for communication (i.e. the impressionistic effect on the hearer) and not on their semantic relevance.

Viaggio (1992: 311) emphasizes the interpreter's capability of successfully managing the use of intonation and pauses to save breath and convey the right meaning by using a minimum of his resources, for instance rendering modal information suprasegmentally. This approach to prosody is illuminating, as it draws upon its *linguistic* functions in communication, but focus is again on the interpreter's performance and not on the speaker's.

Shlesinger (1994), dealing with the typical intonation of a simultaneous interpreter – which she defined *interpretational intonation* – showed how TT prosodic features may actually affect the hearer's comprehension, making it

more difficult as opposed to a performance with the same content but delivered in a situation other than simultaneous interpreting. The contribution by Shlesinger focuses exactly on the linguistic role prosody can play in simultaneous interpretation (SI), but once again it is the interpreter's rendition that is emphasized.

Interpreters seem to have quite a different view on the matter, as shown by Cooper (Cooper et al. 1982). The author investigated possible stress sources among conference interpreters. Out of a population of 886 subjects as many as 70% of them considered one characteristic of *ST presentation* the most stressful work-related factor, i.e. an *unfamiliar accent of the speaker*. The questionnaire also dealt with other aspects, such as *delegates speaking too fast*, *delegates reading from written texts* and *delegates not using their mother tongue when they have a poor command of a foreign language*. This last point seems to justify the present study more than any other reason.

AIIC (1985) carried out an interesting survey revealing that only 7% of comprehension in oral communication relies on lexis, while as much as 38% on intonation (vocal, non-verbal features) and 55% on body language (non-vocal, non-verbal features).

This study is based on a speech presented by a speaker not using his mother tongue; among possible deviations those chosen were those caused by *orthoepical mistakes (segmental deviations)* and by *pause and intonation mismanagement (prosodical deviations)*. Their consequences on the interpreter's text were then verified through semantic TT assessment after a SI task.

2. The segmental and prosodic level of communication and its relevance for SI

2.1. The segmental level

Every discussion on segmental (phonemic) deviations seems to lead to the obvious conclusion that when a phoneme is mispronounced, and a certain intelligibility threshold – which defies definition – is passed, it can severely affect comprehension.

It cannot perhaps be taken just as much for granted that when an utterance contains a number of segmental deviations its intelligibility is preserved only if prosodic information is retained (Lieberman 1967, in Hargrove & McGarr 1994: 7), or that as segmental information becomes progressively degraded, prosody becomes increasingly important (Wingfield et al. 1984, in Hargrove and McGarr 1994:7). The segmental and prosodic levels are realized at the same time in communication and every segmental deviation can affect both the perception of the degraded segments and the rhythmic structure of the utterance as a whole (Weismar & Martin 1992, in Kent 1992: 83).

As long as segmental deviations consist of phonemic insertions, omissions and substitutions which do not alter the auditory comprehensibility of the affected segment, it would seem possible to say that, despite causing considerable difficulties in terms of concentration effort for the hearer, they do not represent a real obstacle to communication. Nonetheless, the presence of such segmental deviations was taken into account in the assessment of the SI performances carried out in this study, even though the number of their occurrences was remarkably inferior when compared to that of prosodic deviations, which substantially affected ST.

2.2. The prosodic level

Prosody is the use of vocal non-verbal aspects of language for communicative purposes. Suprasegmental information may convey additional content or contribute to achieving the communication goal together with other dimensions of language at other levels.

Prosody is a multifaceted phenomenon. Crystal (1981) maintains that it is the result of the combination of several *features* and *components*. The subdivision suggested by Crystal – and applied in this study – was also referred to by Hargrove & McGarr (1994:16):

PROSODIC FEATURES

- pitch, i.e. the auditory perception primarily associated with the acoustic dimension of frequency;
- loudness, i.e. the auditory perception primarily associated with the acoustic dimension of amplitude or intensity;
- duration, i.e. the auditory perception primarily associated with the acoustic dimension of time;
- pause, i.e. the auditory perception primarily associated with silence.

PROSODIC COMPONENTS

- tempo, i.e. the use of timing elements, such as rate of speech, to impart meaning;
- intonation, i.e. the communicative use of pitch;
- stress, i.e. the use of prominence for purposes of communication;
- rhythm, i.e. the use of sequences of stresses and the flow of speech during communication.

In this study, the following have been considered: among features, attention was focused on *pauses*, while, as for *components*, great attention was devoted to *intonation*. *Stress* and *tempo* were not neglected, but they have been taken less

into account. I believed that such prosodic aspects can most intuitively be recognized as a constraint both for listening and comprehension.¹

The following table (Table 1) summarizes some of the most important functions of prosody in communication and attempts to establish a relationship between monolingual and bilingual communicative events as mediated by SI:

MONOLINGUAL COMMUNICATION	BILINGUAL COMMUNICATION MEDIATED BY SI
<p>PRAGMATIC FUNCTION</p> <ul style="list-style-type: none"> • the speaker focuses attention on the important information in the utterance, thereby freeing the listener from the task of continuously monitoring ongoing speech (Allen & Hawkins 1980, in Hargrove & McGarr 1994: 5); • the speaker can differentiate between <i>given</i> and <i>new</i> information (Torsello 1992: 107); • the speaker shows the <i>illocutive force</i> of the utterance (Torsello 1992: 121); • the speaker makes the utterance <i>internally</i> and <i>externally</i> (i.e. semantically, logically, pragmatically and psychologically) <i>coherent</i> and <i>cohesive</i> (which is called <i>texture of the utterance</i>, Canepari 1985: 28); Couper-Kuhlen (1986, in Hargrove & McGarr 1994: 6) draws attention on how speakers and hearers apparently use selected prosodic patterns to add information to a topic (<i>given</i>) and other prosodic patterns to initiate <i>new</i> topics. 	<ul style="list-style-type: none"> • the simultaneous interpreter, who is forced to make a split attentive effort – as opposed to the monolingual communication – can follow the thread of discourse in both languages; • the interpreter can successfully segment TT in information units, re-wording TT by leaving out redundant sentences (for example anaphoric repetitions); • the interpreter can understand a sentence even when he does not know the exact meaning of it (Straniero Sergio 1997). The most relevant component is intonation, through the variation of intonational contour (pitch movement); • the interpreter is provided with cues as to whether closely consecutive sentences, resulting for example from accelerated tempo, are topically related or independent (Couper-Kuhlen 1986, in Hargrove & McGarr 1994: 6); the textural role of prosody is often exploited by speakers to increase the cohesiveness of sustained monologue, a text type which is extremely frequent at international conferences.
<p>SYNTACTIC FUNCTION</p> <ul style="list-style-type: none"> • the speaker marks syntactic structures (Crystal 1981, in Hargrove & McGarr 1994: 6), thus also sentence boundaries. 	<ul style="list-style-type: none"> • Riccardi (1997), when describing <i>conference language</i>, highlights that long embedded or parenthetical

1 More detailed information regarding the theoretical basis corroborating these remarks on the relevance of prosody for SI can be found in the present writer's unpublished dissertation: Mazzetti, A. (1997-98): *L'influsso delle deviazioni segmentali e prosodiche sulla comprensione del testo di partenza in interpretazione simultanea*, Trieste, SSLMIT, Università degli Studi.

	sentences call for correct prosody management to enable the simultaneous interpreter successfully to anticipate the missing linguistic component and complete the ongoing sentence as requested by TL grammar rules.
MNEMONIC FUNCTION <ul style="list-style-type: none"> • Prosody helps the hearer store and retrieve information (Gumperz et al. 1984: 7) 	<ul style="list-style-type: none"> • when the interpreter has to listen to the ongoing sentence and translate the previous one, facilitated storage and retrieval of information enable him to make a balanced use of resources during the whole interpretation task.
INTELLIGIBILITY FUNCTION <ul style="list-style-type: none"> • facilitates communication when frequently recurring sentences are uttered, as speaker and hearer require a smaller effort to monitor or produce such utterances if they conform to their specific prosodic patterns and can devote more attention to the nonprosodic dimensions of communication (Allen 1975, in Hargrove and McGarr 1994: 10) <p>In this respect, the following seem to be of great relevance:</p> <ul style="list-style-type: none"> • the degrading of prosodic information negatively influences performance on comprehension tasks (Allen & Hawkins 1980, in Hargrove & McGarr 1994: 7); • apparently minor errors in prosody may impede intelligibility because the speech is rendered unnatural and may attract undue attention to the prosodic patterns, thereby reducing attention to content (Hargrove & McGarr 1994: 7). 	<ul style="list-style-type: none"> • allows the interpreter to focus on content (nonprosodic dimension) and the communicative intentions of the speaker.

Table 1: The role of prosody in monolingual and bilingual communication mediated by SI

3. Experimental study

This study was carried out at the SSLMIT of the University of Trieste and is based on a simultaneous interpretation task performed from German into Italian of a written text read out and taped.

3.1. Aim of the study

The study aims at assessing whether and to what extent the presentation of a discourse by a speaker who is using a language other than his mother tongue may affect the interpreter's comprehension skills and thus the semantic quality

of his performance. Both ST and TT were analysed: the former at segmental and prosodic level, the latter at semantic.

3.2. Materials

The text adopted in this study was a speech made in 1998 by a German minister at the opening ceremony of a new exhibition centre in Munich. The text was a commemorative monologue of medium-high register showing average formality and idiomatic level, whereas content and rhetorical structures were rather simple.

The choice of an emphatic and rhetorical discourse without above-average lexical density and grammatical intricacy was determined by the need to create an interpretation task in which ST prosody was an important characteristic of the speaker's communicative intention.

3.3 Subjects

The participants were: a German speaker from South Tyrol (T); a bilingual speaker from Switzerland (F) whose dominant language was French and had Italian as a B-language and German as a satisfactory C-language; fifteen interpretation students of the SSLMIT of the University of Trieste who had successfully completed their curriculum for German simultaneous interpretation exams, ten of whom were Italian native-speakers and five of whom had German as their mother tongue.

3.4. Method

The first group of five Italian students was asked simultaneously to interpret the text read by speaker G (text G, group GI), whereas the other ten students (five Italians and five Germans) interpreted in the same way the text presented by speaker F (text F, groups FI and FT). The main difference between group GI and the groups FI and FT was thus the way ST was presented.

The present study aims basically at assessing the influence of ST degraded presentation on comprehension and rendition into Italian by Italian native-speaker interpreters, while the German group was mainly meant for verification of whether they also might experience the same problems when interpreting a text showing linguistic (segmental and prosodic) discrepancies which sounded unnatural and therefore contrary to their expectations as native-speakers.

Text G was presented with typical South German pronunciation and prosody, while text F, as expected, was not always read in the correct manner, either at segmental or suprasegmental level.

All participants performed the interpretation task from a tape and their deliveries were recorded with a double-track machine.

3.5. ST analysis

The first step was the analysis of text F for segmental and prosodic mistakes. This analysis was carried out comparing text F with text G, considered the correct ST version. The procedure adopted was auditory-perceptive, so that mistakes were singled out and described but not explained on the basis of their acoustic correlates. In order to reduce subjectivity, the whole analysis was performed by four different listeners. The data collected were then compared and checked for correspondence to make them homogeneous. The phenomena observed were finally classified according to the *level* at which they occurred, the *category* to which they belonged and the *type* which characterized them, as shown in the following table (Table 2):

1. WORD LEVEL

This *level* comprises a single *category* related to orthoepical² mistakes and is divided into the following *types*:

- phoneme or word substitution;³
- phoneme or word omission;
- phoneme or word insertions;
- word accent mistakes.

2. PHRASE AND SENTENCE LEVEL

This *level* comprises two *categories* related to pause and intonation mistakes and is divided into the following *types*:

2a) pauses:

- pause omissions;
- pause insertions;

2b) intonation contour assigned to tonic words (tonicity and tone groups):

- correct tonic words with a wrong intonation contour;
- insertion of tonic words with a wrong intonation contour;
- omission of tonic words.

2 In this study, an orthoepical mistake was any mistake affecting pronunciation regardless of the respect or violation of any binding pronunciation rule. This *category*, for the sake of simplicity, also includes word accent mistakes.

3 This *type* includes allophonic mistakes, phonemic mistakes due to interference between the speaker's languages and SL and/or the speaker's languages and SL spelling and phonemic mistakes without determinable causes.

3. TEXT LEVEL

This *level* comprises a single *category* related to the segmentation of message in *new* and *given* information (information units, according to stress assignment) and is divided into the following *types*:

- omissions of information units;
- insertions of information units.

Table 2: ST analysis grid

All mistakes of the 2nd level were then considered from two points of view: *substantial*, in order to single out possible *ST meaning misunderstandings (S)*, and *formal*, in order to highlight *ST losses of rhetorical effect (R)*. These characteristics are the *sub-types* of the 2nd level *type*. As a matter of fact, the 1st and the 2nd level also include a third *formal sub-type*, defined as *dissonance*. *Dissonance* is used in the sense of a simple discord, or disharmony, affecting the most superficial segmental and melodic-rhythmic level of an utterance, belonging to the "aesthetical-auditory" sphere of language. As a consequence, the ST semantic analysis carried out in this study focused exclusively on *S* and *R* mistakes. Considering the *sub-type* instead of the *type* made it possible to focus attention on the text as such (i.e., as semantic entity, and not as phonetic occurrence) and on the direct consequences for which the presentation mistakes were responsible.

After repeated listening both STs were transcribed and the following assessed: number of pauses, number of tonic words and information units, number of words, time of reading and tempo. Table 3 shows the data collected with reference to text G:

Phenomenon	Number of occurrences
pauses	278
tonic words	530
information units	530
words	1076
time of reading	10':42"
tempo	100 w./min.

Table 3: General reference data related to text G

The data shown in table 3 were the basis against which text F was then checked. The first figures collected are the following:

Phenomenon	Number of occurrences
orthoepical mistakes	123
pauses	333
tonic words	489
information units	489
words	1074
time of reading	12':03"
tempo	90 w./min.

Table 4: General reference data related to text F

More interesting results emerge however from a thorough observation of the data related to each mistake *category*. The following table (Table 5) is a summary of the total number of mistake occurrences found in text F:

Level	Category	Sub-type			
		Dissonances	S	R	Total
word	orthoepical mistakes	123	3	-	126
phrase and sentence	pause mistakes	150	8	19	177
	intonation mistakes	173	8	67	248
text	information units mistakes	207	-	-	207
Total		653	19	86	653

Table 5: Summary of the total number of mistakes found in text F

Summing up the total number of *S* and *R* mistakes and relating them to the total number of mistakes in the *categories* considered,⁴ the *relevant error margin* of text F was calculated.

A *relevant error margin* of 19,06% seemed to be a realistic evaluation of text F. The German native-speaker listener who co-operated in the auditory-perceptive ST analysis maintained that speaker F basically presented a comprehensible text, even though this performance proved to be much less expressive than that by speaker G. Text F was thus finally judged as being *relatively degraded at segmental and prosodic level*. Table 5 shows that *R* mistakes were more numerous than *S* mistakes, whereas the overwhelming *category* was that of intonation mismanagement.

⁴ As previously stated, *dissonances* were left out from the analysis. However, their presence was taken into account at global level when renditions were compared among all groups, because – as was pointed out – even apparently minor deviations may affect comprehension. Textual mistakes were overlooked as well, as this would have implied a more thorough ST semantic analysis, beyond the scope of the present work. Again, their presence was considered at global level in the final comparison among groups, because text level mistakes affected ST semantic density.

3.6. TT analysis

This analysis was performed considering 28 mistakes of text F (and their equivalent targets in text G) out of a total of 551. The *corpus* consisted of 14 mistakes of the *S* kind and 14 of the *R* kind. An equivalent number of both *sub-types* allowed – within the corpus selected – to assess whether *meaning misunderstandings* and *losses of rhetorical effect* caused different repercussions on TT semantic quality.

3.6.1. Data collection

The whole analysis was performed at semantic level, the error source being exclusively contextual, thus linguistic.

For each target sentence a reason is given why it was semantically correct or incorrect by describing if the interpreters delivered a *translation* or produced *additions*, *omissions* or *substitutions*. Since renditions could also have been wrong for reasons not directly ascribable to ST mistakes, an attempt was made to evaluate their semantic value according to another principle, namely whether or not incorrectness was caused *also* or *exclusively* by ST mistakes. Starting from the observation of the linguistic configurations characterizing the interpreters' performances, the following *categories of rendition* were defined:

CATEGORY I

Semantically incorrect rendition characterized by incorrect linguistic production *only* in relation to ST mistakes.

CATEGORY II

Semantically incorrect rendition characterized by incorrect linguistic production *also* in relation to ST mistakes.

CATEGORY III

Semantically incorrect rendition characterized by incorrect linguistic production *only* in relation to ST items *other than* ST mistakes.

CATEGORY IV

Semantically incorrect rendition characterized by *total* ST omission.

CATEGORY V

Semantically incorrect rendition characterized by *total* incorrect ST substitution.

CORRECT

Semantically correct rendition despite ST mistakes, showing, alternatively, admissible additions, omissions or substitutions (rewording). This category also includes ST renditions by translation.

CATEGORIES I and II are obviously the most relevant for the aim of this study, as their linguistic configuration directly reflects ST mistakes and their

repercussions on TT. CATEGORIES IV and V are meaningful as well, but only at global level, since they do not show any direct relation to ST mistakes. They are an expression of how ST mistakes have probably distorted ST as a whole.⁵ CATEGORY III, finally, shows no relation at all to ST deviations and it is similarly important only at global level. The gravity of the semantic incorrectness of this *category* is less severe than that of CATEGORIES IV and V, as TT still roughly reflects ST content, while the deliveries of the latter categories do not at all.

3.6.2. Numerical assessment

The collected data of each group have been assessed by means of simple per cent calculations and have undergone no statistical elaboration.

3.6.3. Procedure

The final comparison of renditions⁶ was carried out both within each group – comparison *by sub-types* (and *their equivalents*) – and among groups – comparison *by* and *between sub-types* (and *their equivalent*). Attention focused chiefly on incorrect renditions with the aim of concretely highlighting the following:

- 1) the *kind of rendition* (correct or incorrect) prevailing within the group *regardless of sub-types* (and *their equivalents*);
- 2) the *kind of rendition* (correct or incorrect) prevailing within the group *according to sub-types* (and *their equivalents*);
- 3) the *category of rendition* (CATEGORIES I, II, III, IV, V, CORRECT) prevailing within each group *according to sub-types* (and *their equivalents*).

The comparison accounted for the fact that groups FT and TI were homogeneous as for the interpreters' mother tongue but heterogeneous as for ST presentation and that for groups FI and FT the opposite held true. A direct

5 In this respect, it should be born in mind that in a few cases renditions of CATEGORY V did not result as semantically incorrect owing to mistakes directly ascribable to ST deviations. Thus, they should not have been classified as deliveries belonging to this category, but rather to a possible SPURIOUS CATEGORY V. In order not to make the *categories of rendition* too complex, though, such hybrid performances were left within CATEGORY V, also considering that the few occurrences observed did not basically alter the final figures of this category.

6 Since both semantically correct and incorrect renditions were considered, this analysis was not just an *error analysis*.

comparison between group FG and TI was not envisaged, as heterogeneity from both points of view would have made it impossible to draw any conclusion.

The first comparison was meant to emphasize the consequences of ST segmental and prosodic deviations on deliveries rendered by Italian native-speaker interpreters, whereas the latter would reflect whether or not the interpreters' mother tongue – if it is the same as the foreign language used by the speaker – actually plays a role.

4. Results and discussion

1) The results of the first comparison, which was carried out *regardless* of *sub-types* and *their equivalents*, are shown in Chart 1.

Group FI and TI had a very similar percentage of incorrect renditions (80.72% of group FI vs. 86.43% of group TI). Since group TI was asked to interpret the text presented correctly, this first result seems to go against the initial expectations, according to which semantically incorrect renditions would most probably prove to be less numerous in this group than in the other. The different tempo (90 w./min. of group FG vs. 100 w./min. of group TI) might have had a considerable influence on the interpreters, as, for non-professionals, speed is often critical.

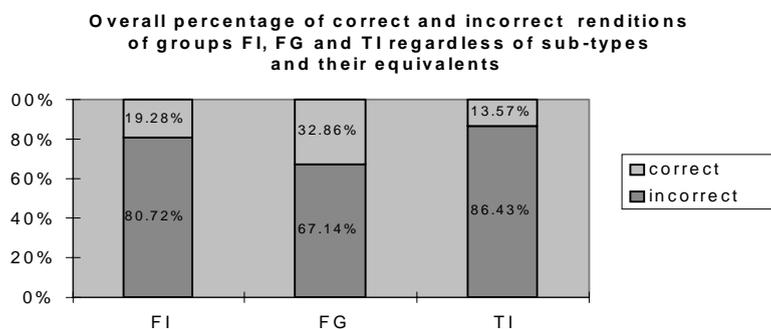


Chart 1

The comparison between group FI and FT shows, on the other hand, that the German-speaking interpreters registered a markedly lower percentage of incorrect renditions than the group of Italian speakers (67.14% of group FG vs. 80.72% of group FI). German native-speaker interpreters seemed to be less influenced by segmental and prosodic deviations, probably thanks to their linguistic sensitivity enabling them to detect the deviation produced by speaker F and retrieve – by means of guesswork – the correct form of the utterance and thus deliver less incorrect renditions.

2) This comparison was performed *according to sub-types and their equivalents*.

Sub-type S (and its equivalent) was the first of the two *sub-types* by which the comparison between groups was drawn.

In all groups incorrect renditions prevailed over correct ones: group FI registered 80% of them, group FG 64.28% and group TI 90%. This was shown in Chart 2.

The comparison between groups FI and TI shows that the percentage of incorrect renditions was higher in the latter (80% of group FI vs. 90% of group TI). The hypothesis suggested under 1) seems to apply to this case as well.

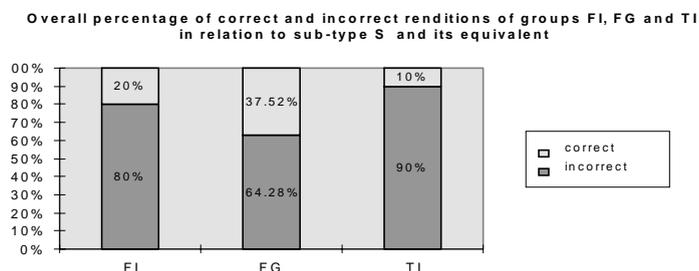


Chart 2

After comparing group FI with group FG it emerged, again, that the interpreters belonging to the second group were able to deliver a lower number of incorrect renditions (80% of group FI vs. 64.28% of group FG). Once more, this result could be explained by the hypothesis under 1).

3) The *kind of rendition* prevailing in each group was as follows: group FI showed 28.57% of its total in CATEGORY V, group FG 23.57% of its total in CATEGORY III, whereas group TI 28.57% of its total in CATEGORY II. The results are shown in Chart 3.

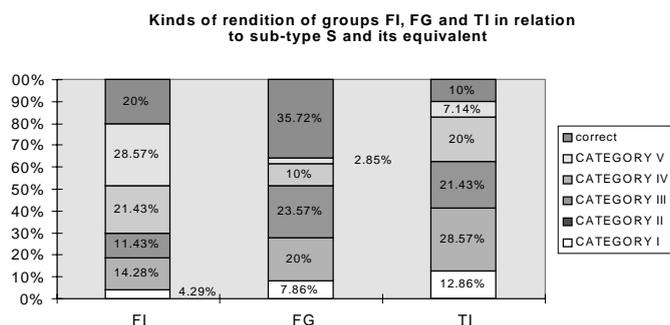


Chart 3

It soon appears that each group was characterized by a different kind of prevailing rendition.

The comparison between groups FI and TI revealed that the latter produced a higher number of sentences belonging to CATEGORY II. Moreover, this group rendered ST with deliveries ascribable to CATEGORIES I and III with a comparatively higher frequency. At this point, it could seem that group GI made many more TT mistakes than group FI, but a closer look at the results is enlightening: while on the one hand it is undoubtedly true that group GI delivered numerically more incorrect TT sentences than group FI and that the percentage of omissions of TT sentences (CATEGORY IV) is almost the same for both (21.43% of group FI vs. 20% of group GI), on the other hand it can hardly be disregarded that group FI registered a much higher number of renditions in CATEGORY V (28.57% of group FI vs. 7.14% of group GI). The semantic nature of TT mistakes in CATEGORY V is extremely negative, as these are *total* substitutions of ST content, i.e. renditions which are completely different from its content. The group of Italian speaking interpreters stands out therefore not so much because of its actual percentage of incorrect renditions, but rather because of the semantic nature of their incorrectness. From this point of view, it would seem plausible to maintain that group FI, which was administered a segmentally and prosodically degraded ST, delivered a higher number of semantically more incorrect sentences in relation to *sub-type S* than group GI did when interpreting the same target sentences from the correct ST.

Results appear similarly complex also when comparing group FI with group FG.

The kind of rendition prevailing in group FG is that of CATEGORY III. This category, as already pointed out, is hybrid and it renders the aim of the present study superfluous. But it cannot be denied that from a semantic point of view the renditions belonging to this category are still incorrect and thus unquestionably mistakes. Despite showing no relationship with ST mistakes, renditions of this kind still directly reflect ST content – as opposed to CATEGORY V – and it would therefore seem possible to say that the interpreters' mother tongue has a great influence on the semantic quality of delivery. As already stated, group FI interpreted ST distorting its content far more seriously than group FG.

The second part of the final comparison focused on the interpreters' reaction to *sub-type R* and *its equivalent*.

- 2) Also in this case, the kind of rendition prevailing in each group was the incorrect one: group FI reported a percentage of 81.43%, group FG 80% and group GI 82.86%. This is shown in Chart 4.

From the comparison of group FI with group GI it clearly emerges that both groups delivered an almost identical percentage of incorrect TT sentences (81.43% of group FI vs. 82.86% of group GI). It would seem that the hypothesis suggested with respect to *sub-type S* and *its equivalent* could hold true in this case as well, i.e. that the group of Italian speaking interpreters might have been influenced by the higher tempo of their speaker.

Overall percentage of correct and incorrect renditions of groups FI, FG and TI in relation to sub-type R and its equivalent

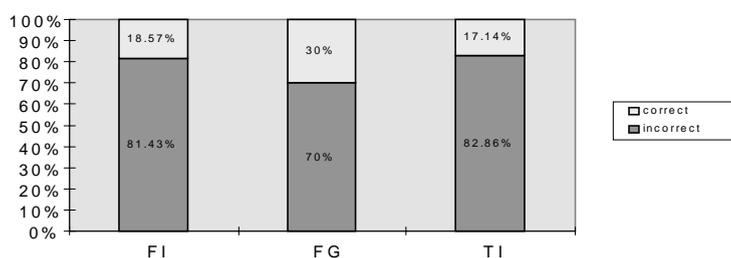


Chart 4

After comparing group FI with group FG it emerged again that the German native-speaker interpreters reported a markedly lower percentage of incorrect deliveries (81.43% of group FI vs. 70% of group FG). Thanks to their assumed native linguistic sensitivity the German speaking interpreters were able to render ST with correct TT sentences in a higher number of cases.

- 3) The kind of rendition prevailing in each group was that of CATEGORY II, with a very similar percentage for each: 39.30% of group FI, 40.72% of group FG and 39.28% of group GI (see Chart 5).

Since the overall distribution of renditions among the *categories* was very similar in all groups, it seemed impossible to establish any kind of relationship between ST deviations and TT semantic quality in relation to *sub-type R* and *its equivalent*, both from the point of view of the kind of ST presentation and from that of mother tongue. It still seems interesting that group GI, which was asked to interpret a correct ST, reported a percentage of incorrect renditions almost identical to that of group FI, to which a segmentally and prosodically degraded ST was administered. To the same extent, it is still of some relevance that the German speaking interpreters registered a markedly higher percentage of correct renditions than the Italian speakers (30% of group FG vs. 18.57% of group FI and 17.14% of group GI). Both facts could be explained drawing upon the hypothesis formulated for *sub-type S* and *its equivalent*.

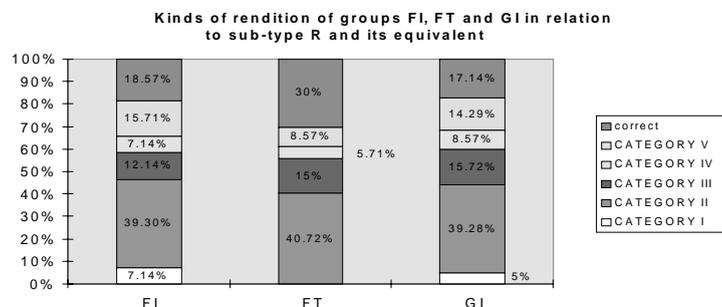


Chart 5

Before discussing the results concerning the final comparison *by sub-type* (and *its equivalent*) between the groups, it should be remembered that in all groups the percentage of incorrect renditions proved to be higher than that of correct ones in relation to each *sub-type* and *its equivalent* (as shown in Charts 2 and 4). The comparison under 2) and 3) revealed the following:

- 2) both group FI and TI reported the highest percentage of incorrect renditions in relation to *sub-type S* and *its equivalent*, whereas group FG showed a markedly stronger tendency to be influenced by *sub-type R* (as shown in Charts 2 and 4);
- 3) the kind of rendition prevailing in each group was different for each in relation to *sub-type S* and *its equivalent*, while it was homogeneous in relation to *sub-type R* and *its equivalent* (as shown in Charts 3 and 5). In particular, in relation to *sub-type S* and *its equivalent* a great difference was observed between groups FI and TI within CATEGORY V (28.57% of group FI vs. 7.14% of group GI, as shown in Chart 3).

5. Conclusions

The segmental and prosodic deviations found in ST had been considered as a possible cause of ST *meaning misunderstanding* and *loss of rhetorical effect*.

On the basis of the results emerging from the semantic analysis of the interpreters' renditions, it would seem possible to say that when ST is a German celebrative discourse held in the form of a monologue and interpreted simultaneously into Italian by non-professional Italian native-speaker interpreters such deviations actually do influence TT semantic quality. This influence would seem to have remarkable repercussions more on the *quality* of TT mistakes than on their *quantity*, leading to semantically more severely

incorrect renditions on the part of the interpreters asked to interpret the segmentally and prosodically degraded ST. Allen & Hawkins's theory (1980, in Hargrove & McGarr 1994: 7), whereby the degrading of prosodic information negatively influences performance on comprehension tasks, would thus seem to hold true for SI as well. Since ST was only *relatively* degraded at segmental and prosodic level, it would seem that also Hargrove & McGarr's theory (1994: 8) can apply to the results of this experimental study, i.e. that even apparently minor deviations may impede intelligibility and cause a communication breakdown.

It would also seem that the interpreter's mother tongue might play a critical role. The German native-speaker interpreters to whom the degraded ST were administered indeed reported an overall percentage of incorrect renditions that was markedly lower than that of Italian native-speaker interpreters who were asked to interpret the same ST. Moreover, the renditions delivered by the German native-speaker interpreters proved to be semantically less incorrect.

The interpreters' mother tongue also appeared to have determined a different degree of influenceability by the deviation *sub-type*: the Italian native-speaker interpreters were more strongly influenced by ST deviations causing ST *meaning misunderstandings* – occurring in ST segments which would have required correct use of expressive linguistic means because of ST particular density – while the German native-speaker interpreters were influenced more by deviations causing ST *loss of rhetorical effect* – which were found in ST portions characterized by the need to make ST presentation particularly emphatic.

The analysis of ST *segmental* deviations revealed a conspicuous number of incorrect words, but, all in all, the cases ascribable to sub-types – which concretely differentiated *mistakes* from *dissonances* – were very few and it was not possible, in this study, to assess the influence that they may have on ST comprehension in SI. In this final discussion, it appears nonetheless useful to draw attention to segmental deviations as well, since *segmental dissonances*, too, might have played a role in overall ST comprehension (Weismar & Martin 1992, in Kent 1992: 3).

The situation looks quite different where *prosodic deviations* are concerned.

Prosodic degradation caused by *omissions (aprosodic phenomena)* make ST presentation flat and inexpressive. From the point of view of SI operational technique it would seem plausible to maintain that this kind of deviation requires from the interpreter a greater concentration effort in order not to miss the linguistic items which were not assigned the proper prosodic feature or which were not coupled with the due prosodic component. Such items pass by quite "unnoticed" in the flow of the phonic incoming material without leaving traces in the interpreter's working memory, thus forcing him to make a more

intense effort for their retrieval. An indirect repercussion is reflected for example by the number of information units in which ST is divided. When a certain amount of words and phrases carrying *new* information are not made prominent, the information that should be conveyed by them becomes part of an information unit which semantically was not meant to carry them, thus *condensing* meaning in a reduced number of units and making it more difficult for the interpreter to segment it. The degraded text of this experiment was indeed *denser* than the correct one, as the number of sentences carrying *new* information was not respected in the incorrect version (530 information units of text G vs. 489 of text F).

Prosodic deviations occurring in the form of *insertions (hyperprosodic phenomena)* may, on the other hand, lead to opposite problems for the interpreter. If, on the one hand, it is true that they make a higher number of linguistic items more emphatic and thus more easily retrievable, on the other, they hamper the process of differentiation between *new* and *given* information, which, in its turn, should facilitate the interpreter's task of successfully rewording ST by leaving out its redundancies (which are usually associated with non-emphatic presentation in a discourse whose prosody is mastered sufficiently). A difficulty experienced in this study by interpreters when interpreting the degraded discourse was the insertion of pauses in compound words: the separation of components induced them, in a few cases, to translate compounds as separate words, leading to changes of meaning in their renditions.

The different semantic quality of the two Italian native-speaker interpreter groups could therefore be finally explained by *Gile's effort model* (1997). After listening to the interpreters' performances with a double-track machine, it turned out that the interpreters who were asked to interpret the incorrect ST kept a greater time distance from the speaker's beginning and end of each sentence in order to grasp its meaning. The time-lag prolongation due to the greater effort in the listening and comprehension phase of the interpretation task finally unbalanced the distribution of the interpreters' resources, which could definitely be seen as the cause of the inferior semantic quality of their renditions.

In order to complete the discussion of these results, it is necessary to consider the *language pair* and *direction* associated with the task performed.

First, it should be remembered that when the language pair involved consists of languages whose structures are quite different, such as German and Italian, a certain degree of detachment from ST content cannot be avoided in renditions by non-professional interpreters, even when ST is correct. The fact that the renditions delivered by the group interpreting the degraded ST are actually semantically more incorrect seems to show that segmental and prosodic deviations may indeed make this aspect worse.

The *linguistic direction* probably played a critical role too. The Italian native-speaker interpreters performed their task translating into their mother tongue, while the German speaking group used their B language. Giambagli (1990: 5), while discussing interpretation from the mother tongue into a B language, pointed out that when the discourse is delivered in the interpreter's mother tongue ST comprehension can be assumed right from the start, thus supporting Denissenko's theory (in L. Gran & J. Dodds 1988: 157) whereby "[...] his [the interpreter's] comprehension is frequently impeded by the defective language of non-native-speakers [...]. It can hardly be denied that comprehension in the mother tongue is easier than in an acquired language". This seems to be an important statement for the evaluation of the results of this study. The fact that the mother tongue can be readily understood enables the interpreter who is translating into his B language to focus his efforts on TT linguistic production (Giambagli 1990: 19) and, definitely, to keep Gile's balance. Giambagli also emphasizes that professional interpreters believe that ST presentation in the interpreter's mother tongue by a speaker who is not using this language as his own mother tongue can facilitate the interpreter's task when associated with interpretation into a B language.

The results recorded in this study by the German native-speaker interpreters seem to confirm Giambagli's theory also in the case of non-professional interpreters. The hypothesis suggested here that the interpreters' native linguistic sensitivity might have enabled them not to be influenced by ST deviations would seem to confirm the idea that interpretation into a B language is probably easier than interpretation into the mother tongue even when ST is segmentally and prosodically degraded. Just as clearly, the results emerging from this experimental study would appear to confirm that ST presentation by a speaker not using his mother tongue and degrading ST at segmental and prosodic level can cause quite remarkable difficulties when interpretation is performed into the mother tongue.

Appendix

The following is an excerpt of each ST transcription. Neither punctuation nor orthographical rules were applied (apart from capital letters at the beginning of items which are nouns, as is usual in written German), as the transcription only represents the phonic flow of discourse. On the other hand, indentation was maintained, because it was believed that this could make reading easier. The symbols used for the transcription are the following:

underlined = word accent mistake (the relevant syllable is underlined);

italics = phoneme or word substitution;

~~barred~~ = phoneme or word omission;

(parenthesis) = phoneme or word addition;
 / = tone group boundary;
 || = pause;
 CAPITAL = tonic word;
 superscripted minus (⁻) = prosodic omission;
 superscripted plus (⁺) = prosodic insertion;
 superscripted E (^E) = incorrect intonation contour;
 superscripted R (^R) = loss of rhetorical effect;
 superscripted S (^S) = meaning misunderstanding.

The following are the first paragraphs of text G:

meine DAMEN / und HERREN ||
 ich freue mich SEHR || HEUTE || auf dieser ERÖFFNUNGSVERAN-
 STALTUNG || zu GAST / zu SEIN || und Ihnen PERSÖNLICH || meine
 HERZLICHEN / GLÜCKWÜNSCHE / ÜBERMITTELN / zu DÜRFEN ||
 seit / HEUTE / hat / MÜNCHEN / eine neue MESSEANLAGE || die
 MÜNCHNER || waren ja schon IMMER / der MEINUNG || sie SEIEN / der
 NABEL / der WELT || und die MESSEANLAGE / die wir HEUTE eröffnen ||
 IST || wenn schon nicht NABEL / der WELT || so doch JEDENFALLS ||
 TREFFPUNKT der Welt || dies BEZEUGEN / ALLEIN schon / die vielen
 GRUßWORTE / aus ALLER Welt || die HIER / auf so ANSCHAULISCHER
 Weise / PRÄSENTIERT werden ||

This is an excerpt of text F. The transcription represents *text F as compared to text G*, thus it contains both correct and incorrect phenomena, and both insertions and omissions.

meine DAMEN und Herren ^{-R}||
 ich freue mich SEHR ||^R / heute ^{-R} ||^R auf dieser ERÖFFNUNGSVERAN-
 STALTUNG || zu GAST / zu SEIN ^E|| und Ihnen PERSÖNLICH || meine
 HERZLICHEN Glückwünsche ⁻ ||⁺ übermitteln ⁻ zu DÜRFEN ||
 SEIT ^{+E} / HEUTE ^{+E} ||⁺ / HAT ^{+E} / MÜNCHEN ||⁺ eine NEUE ^{+E}
 Messeanlage ⁻ || die MÜNCHNER || waren ja schon IMMER / der MEINUNG ||
 sie seien ⁻ der NABEL / der WELT ^E || und die MESSEANLAGE ||⁺ die wir
 heute ^{-R} ERÖFFNEN ^{+E} || / IST || wenn schon nicht NABEL / der WELT || so
 doch JEDENFALLS ^{ER} || TREFFPUNKT ^{ER} / der WELT ^{+E} || / dies BEZEUGEN
 ||⁺ / ALLEIN ||⁺ / schon die VIELEN ^{+E} / GRUßWORTE ||⁺ / aus ALLER Welt /
 die HIER ||⁺ / auf so ANSCHAULISCHER
 Weise / präsentiert ⁻ WERDEN ^{+E} ||

References

- AIIC (1985): Edition Spécial, Symposium de Strasbourg, AIIC Bulletin Vol. XIV, No. 1.
- Allen G.D. (1975): "Speech Rhythm: Its Relation to Performance Universals and Articulatory Timing", *Journal of Phonetics*, 3, pp. 75-86.
- Allen G.D. & Hawkins S. (1980): "Phonological Rhythm: Definition and Development", in *Child Phonology*. Ed. by J.F. Yeni-Komshian, Kavanagh & C.A. Ferguson Vol. 1, Production, New York, Academic Press, pp. 227-255.
- Altman J. (1990): "What helps effective communication? Some interpreters' views", *The Interpreters' Newsletter*, 3, pp. 23-32.
- Bühler H. (1986): "Linguistic (Semantic) and extra-linguistic (Pragmatic) Criteria for the Evaluation of Conference Interpretation and Interpreters", *Multilingua*, 5-4, pp. 231-235.
- Bühler H. (1989): "Discourse Analysis and the Spoken Text: A Critical Analysis of the Performance of Advanced Interpretation Students", in *The Theoretical and Practical Aspects of Teaching Conference Interpretation*. Ed. by L. Gran & J. Dodds, Udine, Campanotto, pp. 131-136.
- Canepari L. (1986): *L'intonazione*, Napoli, Liguori Editore.
- Cooper C.L., Davies R. & Tung R.L. (1982): "Interpreting Stress: Sources of Job Stress Among Conference Interpreters", *Multilingua*, 1-2, pp. 97-107.
- Couper-Kuhlen E. (1986): *An Introduction to English Prosody*, Baltimore, Edward Arnold.
- Crystal D. (1981): *Clinical Linguistics*, New York, Springer Verlag/Wien.
- Denissenko J. (1989): "Communicative and Interpretative Linguistics", in *The Theoretical and Practical Aspects of Teaching Conference Interpretation*. Ed. by L. Gran & J. Dodds, Udine, Campanotto, pp. 155-157.
- Giambagli A. (1990): *Considerazioni sull'interpretazione dalla lingua materna verso la lingua straniera: quando e con quali esiti?*, Trieste, SSLMIT.
- Gile D. (1997): "Conference Interpreting as a Cognitive Management Process", in *Cognitive Processes in Translation and Interpreting*. Ed. by J.H. Danks *et al.*, Thousand Oaks, California, Sage Publications Inc, pp. 196-214.
- Gumperz J.J., Kaltman H. & O'Connor M.C. (1984): "Cohesion in Spoken and Written Discourse: Ethnic Style and the Transition to Literacy", in *Coherence in Spoken and Written Discourse*. Ed. by D. Tannen,

- vol. XII of *Advances in Discourse Processes*, Norwood, New Jersey, Ablex Publishing Corporation.
- Hargrove P.M. & McGarr N.S. (1994): *Prosody Management of Communication Disorders*, San Diego, California, Singular Publishing Group Inc.
- Kopczynski A. (1994): "Quality in conference interpreting: some pragmatic problems", in *Bridging the Gap: Empirical Research in Simultaneous Interpretation*. Ed. by S. Lambert & B. Moser-Mercer, Amsterdam-Philadelphia, John Benjamins, pp. 87-100.
- Kurz I. (1993): "Conference Interpretation: Expectations of different User Groups", *The Interpreters' Newsletter*, 5, pp. 13-21.
- Lieberman P. (1967): *Intonation, Perception and Language*, Cambridge, MIT Press.
- Marrone S. (1993): "Quality: A Shared Objective", *The Interpreters' Newsletter*, 5, pp. 35-41.
- Pöschhacker F. (1994): *Simultandolmetschen als komplexes Handeln*, Tübingen, Gunter Narr Verlag.
- Riccardi A. (1997): "Lingua di conferenza", in *Nuovi orientamenti negli studi sull'interpretazione*. A cura di L. Gran e A. Riccardi, Padova, CLEUP, pp. 59-74.
- Schjoldager A. (1996): "Assesment of Simultaneous Interpreting", in *Teaching Translation and Interpreting 3: New Horizons*. Ed. by C. Dollerup & V. Appel, Amsterdam, John Benjamins, pp. 187-195.
- Shlesinger M. (1994): "Intonation in the Production and Perception of Simultaneous Interpretation", in *Bridging the Gap: Empirical Research in Simultaneous Interpretation*. Ed. by S. Lambert & B. Moser-Mercer, Amsterdam, John Benjamins, pp. 225-236.
- Straniero Sergio F. (1997): *Interpretazione simultanea dal russo in italiano*, Trieste, Edizioni Goliardiche.
- Taylor-Torsello C. (1992): *English in Discourse 2*, Padova, CLEUP.
- Viaggio S. (1992), "Translators and Interpreters. Professionals or Shoemakers?", in *Teaching Translation and Interpreting – Training, Talent and Experience*. Ed. by C. Dollerup & A. Loddegaard, Amsterdam, John Benjamins, pp. 307-312
- Weismar G. & Martin E.R. (1992): "Acoustic and Perceptual Approaches to the Study of Intelligibility", in *Intelligibility in Speech Disorders*. Ed. by R.D. Kent, Amsterdam, John Benjamins, pp. 67-118.
- Wingfield A., Lombardi L. & Sokol S. (1984): "Prosodic Features and the Intelligibility of Accelerated Speech: Syntactic versus Prosodic Segmentation", *Journal of Speech and Hearing Research*, 27, pp. 128-134.