

**PAUSES IN SIMULTANEOUS INTERPRETATION:
A CONTRASTIVE ANALYSIS
OF PROFESSIONAL INTERPRETERS' PERFORMANCES**

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1. Introduction

The aim of the present study is to describe the performances of 11 professional interpreters, who were asked to interpret two texts from English into Italian. The texts were read by a native English speaker, at two different speech rates, in order to compare pause occurrence in the source and target texts. Differences in terms of pause duration and pause function were recorded and categorised according to the current literature on pauses in psycholinguistics and rhetoric.

The results obtained from the analysis of target texts were then compared to each interpreter's subjective perception of their own delivery. Significant inconsistencies between the objective data and the subjective perception of performances were highlighted, which suggests that there is a need to enhance interpreters' awareness of their own delivery.

2. The simultaneous interpreter: a public speaker

The relevance of non-verbal communication for simultaneous interpretation is highlighted in the current literature. Indeed the focus is not only on content but also on form.

Gile (1995: 152), for instance, states that the concept of *fidelité informationnelle* refers both to content and form. This means that interpretation consists of translating a source text into a target text, maintaining not only the content but also the stylistic and rhetorical element which characterises it (Riccardi 1999: 48). Straniero (1999: 109) draws attention to the fact that the absence of spontaneous prosodic features hinders the smooth comprehension of the text. Politi (1999: 200) emphasises the role of intonation and pauses, which are considered a sort of 'oral punctuation conveying further information, counteracting the oral nature of the discourse and catching the attention of the listener'. Viezzi (1996: 96) defines the elusive concept of quality in interpretation, introducing four parameters, namely equivalence, accuracy, appropriateness and usability. The last parameter concerns the non-linguistic aspects of oral production, related to target text delivery. Prosody, pauses, voice quality, hesitations, all have a significant role in communication. A monotonous

interpreter jeopardises the usability of the target text. The interpreter, as a public speaker, has to use pauses correctly and to adopt a proper speech rhythm. Viaggio (1992) provides an exhaustive description of simultaneous interpretation, focusing attention on what he calls the ‘textual activity component’, namely form. The interpreter is asked to be ‘duly conversant with the use of oral speech, first and foremost intonation and pause management’, to save time and to convey ‘modal information suprasegmentally’ (Viaggio, 1992: 311).

3. The importance of non-verbal communication for simultaneous interpretation

The *reality of speech* (Poyatos, 1997: 249) consists of ‘what we say’, namely verbal communication, ‘how we say it’, paralinguistics, and ‘how we move what we say’, namely kinesics. All aspects involved in the *reality of speech* are relevant for interpreters since they interpret messages conveyed through words, paralinguistic elements and gestures. Non-verbal components are sometimes useful to understand the real meaning of the message, beyond the surface of words. Non-verbal aspects of communication have been subdivided into *vocal* and *non-vocal* non-verbal aspects¹, the first being related to paralinguistics and prosody, the latter to kinesics and prossemics.

Prosody is the use of vocal non-verbal aspects for communication purposes and it consists of features (*pitch, loudness, duration and pauses*) and components (*tempo, intonation, stress and rhythm*). The ability of the interpreter to manage properly these different prosodic elements, usefully serves as a ‘*safety net* when he gets in difficulty’ (Weber 1989: 164). Interpreters use prosody to deliver their texts more smoothly (Straniero 1999: 110). Alexieva (1990: 5, in Straniero 1999: 110) noted that ‘a clever use of one’s voice qualities - in addition to a felicitous choice of prosody, may also contribute to the transmission of the speaker’s message to the audience and thus ensure a successful realisation of the communicative act’.

4. The relevance of pause occurrence

The present study is focused on the role and function of pauses, which are one of the four prosodic features whose co-occurrence gives rise to the four prosodic components. The link between the various features and components is evident, and pauses are associated with other prosodic elements. For instance, speech rate

¹ More precise and detailed information on the functions of verbal and non-verbal communication may be found in Cecot (2000).

depends on pause frequency and duration, and intonation contours are emphasised by pause occurrence.

Hargrove and McGarr (1994: 109) stated that pauses 'are physically represented as a period in time in which no acoustic signal occurs for at least 200-270 msec'. Pauses are referred to as *silence*, *hesitation* and *uncture*. Indeed, pauses are silent intervals of variable duration located between linguistic units that can be compared to suprasegmental elements (Simone 1990). Simone (1990: 126) distinguishes between two types of pauses. The first, *individual* pauses, are occasional silent moments due to the communicative intention of the speaker or to external events, and the second, *functional* pauses, are placed at grammatical *unctures*, namely outside the boundaries of words and clauses. But there is also a third type of pause not functional to communication, namely *hesitation pauses*, which occur at non-grammatical *unctures*. *Hesitation pauses* may be subdivided into *filled* and *unfilled* pauses. The first are disturbing elements for the listener, such as vowel lengthening and the use of the fillers 'ah', 'ehm', 'eh', etc. (Canepari 1985). Spontaneous speech is characterised by the occurrence of *non-fluencies*, such as false starts, interruptions and incomplete sentences, which are mainly due to the nature of linguistic production. These features may co-occur during the performances of interpreters. For instance difficulties in the syntactic or lexical planning of the discourse coincide with the occurrence of *hesitation pauses*.

Pichler (1995) underlines that *grammatical pauses*, namely pauses at grammatical *unctures*, differ from *hesitation pauses* in terms of distribution and duration. Hesitation pauses do not follow any distribution rules, since they are spontaneous and due to on-line planning, lexical difficulties, etc. Hence a regular distribution of pauses may only be recorded in read texts (1995: 56), in which there is no need for on-line planning. This means that there is no regular distribution of pauses in the target texts produced by interpreters. As far as duration is concerned, grammatical pauses follow a hierarchy. Pauses at the end of major constituents are longer than pauses within constituents.

The duration and distribution of pauses depend on the individual physiology of the speaker (*breathing pauses*), on the production task (reading or spontaneous speech - *lexical or syntactic planning pauses*) and on the communicative intentions of the speaker (*rhetorical pauses*).

Hargrove and McGarr (1994) focused attention on the communicative function of pauses. Speakers segment their discourse through grammatical pauses, enabling the listener to understand the syntactic organisation of the discourse. Moreover, pauses emphasise the new and most important information in a sentence and, last but not least, provide time to plan the discourse. Hence pauses are useful for all the actors involved in the communicative act.

5. Pauses in psycholinguistic and rhetorical studies

The first studies on pauses were published in the 1960s, but it was only in the 1980s that the role of pauses was thoroughly investigated. In the 1960s pauses were seen as signals of uncertainty and hesitation, as interruptions in oral production (Petrilli 1985). It was in the early 1980s that a new approach to pauses emphasised the relation between pause occurrence and emphatic devices, the association between pause occurrence and pragmatics (Pribram 1980) and the functional aspects of pauses (Brown and Yule 1983). In 1980 Grosjean stated that

there may be 40 or 50 different variables that can create a silence in speech. A silence may mark the end of a sentence, you can use it to breathe, you can use it to hesitate: there may be 10 or 15 different things happening during silence (1980, in Avesani and Vayra 1992: 389).

In 1985 Petrilli suggested that ‘silences’ have a communicative value. The relation between pauses and pragmatics was emphasised in the 1990s by Giannelli (1992), who draw attention to the fact that pauses and other prosodic devices, such as intonation, emphasise new information in the sentence. These pauses have been referred to as ‘wise pauses’. Other authors underlined the relation between prosody and discourse organisation (Avesani and Vayra 1992), emphasising the link between intonation and pauses. Avesani and Vayra (1992) presented Grosjean’s categorisation of pauses into pauses at the end of syntactical boundaries, breathing pauses and hesitation pauses. According to Studdert-Kennedy (1983) the latter mirror automatic cognitive and physiological processes and have nothing to do with the communicative intentions of the speaker. Yet the public speaker is trained to make breathing pauses and pauses at the end of syntactical boundaries coincide with grammatical junctures and with relevant information in the discourse.

This means that psycholinguists focus on the physiological and cognitive processes which are at the basis of pause production, whereas rhetoric and public speaking focus on the communicative aspects linked to pauses.

5.1 A psycholinguistic approach

As stated above, psycholinguistics analyses the cognitive and physiological aspects linked to pause occurrence, namely *speech understanding* and *speech production*, in the following ways:

- By analysing situations when communication fails, namely when there are disfluencies, in order to understand processes that take place under normal conditions;

- By conducting experiments with normal subjects;
- By setting up software programs.

The present study is based on these modalities. Source and target texts have been analysed in terms of the occurrence of disfluencies, in order to understand the processes that occasioned them. The source text involved a reading task, while the target texts entailed all the tasks involved in simultaneous interpreting performed by normal subjects. The recording and measurement of pauses was carried out through a software program.

As far as the contribution of psycholinguistics to pause occurrence in interpreter's texts is concerned, the studies of Goldman-Eisler (1968) are particularly useful. The author notes that in the early 1960s researchers began to focus on the relation between human beings and time and discovered that mankind struggles to avoid time pressure. In conversation, for instance, time is shared among participants and in simultaneous interpretation time pressure is particularly important.

On the basis of these assumptions Goldman-Eisler (1951) studied the relation between periods of inactivity and periods of activity in speaking, which means the relation between pauses and linguistic production. Goldman-Eisler (1951) noted that pauses follow a certain scheme and that they determine speech rate, which is a personal characteristic of the speaker. Silent periods mirror central activity, since activity periods are peripheral phenomena. 'A passage of speech extending into time consists of two sorts of time: time of vocal action and time of silence' (Goldman-Eisler 1968: 11). This means that spontaneous speech is characterised by discontinuity due to hesitations and breathing. Goldman-Eisler analysed the occurrence of hesitations in interviews and in simultaneous interpreted texts. Hesitation pauses signal content, syntactic and lexical planning. Even in the case of interpreters, syntactic and lexical planning may lead to hesitations and Goldman-Eisler noted in particular that hesitations in interpretation increase when interpreters change the source text (ST) structure.

Goldman-Eisler's findings are limited by lack of reference to the languages used, which would have been particularly relevant when comparing syntactic structures in ST and TT.

Goldman-Eisler emphasised the relation between on-line planning and hesitations and stated that 'the creative act of generating speech interferes with the proficiency of rhetorical performance' (1968: 95). Hence the author recognised the existence of pauses which are rhetorical in function and which are useful for effective communication.

5.2 A rhetorical approach

Recent public speaking studies, based on the ancient *ars bene dicendi*, emphasise the role of silence, which challenges rhetoric (Mortara Garavelli 1998). Delivery is not the most complex aspect of public speaking, but it acquires great importance since it attracts the attention of the listener who will be positively impressed by an effective public speaker. Voice control, namely loudness, intonation, diction, speech rate and, obviously, pauses are tools at the disposal of public speakers. Pauses highlight transition points in the discourse, emphasise significant concepts, give time for thinking – in short they are persuasion instruments. Beebe and Beebe (1991) demonstrate that 93% of the emotional impact conveyed by a message depends on non-verbal communication, 38% on prosodic elements and 55% on facial expression. Hence the need for interpreters to develop public speaking skills.

6. Pause categorisation

An in-depth description of the history of pause categorisation will be provided to reaffirm the relevance of pause occurrence in oral discourse, and to convey a clear image of the whole variety of pauses that a speaker may use.

Maclay and Osgood (1959) were the first to propose a categorisation of pauses. They distinguished between *filled* and *unfilled* pauses. The former included: *repetition*, *false starts* and *vowel lengthening*. Many other authors based their own studies on this categorisation.

(a) One of the most recent and accurate proposals is the categorisation put forward by Magno Caldognetto, De Zordi and Corrà (1982). They stressed the fact that pauses are necessary for comprehension and production of spontaneous speech; pauses are useful signals to understand the processes underpinning production, namely *macro* and *micro on-line planning* of the discourse. The former refers to semantic and syntactic organisation of the utterances, the latter refers to lexical choices. Both require a sort of ‘production moment’ (*tempo reale di elaborazione*, Magno Caldognetto *et al.* 1982: 13) provided by pauses. The authors analysed the relation between discourse planning and speech production and mentioned Goldman-Eisler’s theory of a temporal cycle in which two phases, ‘hesitation phase’ and ‘fluent phase’, alternate. In the case of phase overlapping there is an increase in pause frequency. The speaker may have not planned the whole discourse before beginning to speak and pauses, interruptions and repetitions signal the need to plan the discourse.

The authors focused attention on the role of pauses for the ‘theoretical concept of ideal production’ (Magno Caldognetto *et al.* 1982: 14), which

foresees the occurrence of pauses between sentences, utterances and clauses, namely at grammatical junctures. These ‘pauses for the speaker’ (Magno Caldognetto *et al.* 1982: 15) enable them to breathe. Spontaneous speech is characterised by the presence of these pauses, but also by the use of *non-fluencies*, namely fluency interruptions, which are categorised as follows:

1. *unfilled pauses or initial delay* which, for the interpreter, correspond to the décalage with the source text;
2. *Unfilled pauses within the utterance or juncture pauses*, such as pauses occurring at grammatical junctures, which are useful for the speaker and the listener at the same time. The former makes breathing pauses coincide with grammatical junctures to let the latter understand the syntactic organisation of the discourse;
3. *Unfilled pauses within clauses in the utterance*, namely pauses occurring at non-grammatical junctures, due to cognitive or socio-linguistic factors, or to speaker disorders.
4. *Filled pauses, hesitations*, such as *ehh, mhm, mah, beh, bah* (used by Italian speakers), glottal clicks, audible breathings;
5. *Parenthetical sentences, corrections*;
6. *Utterance interruptions*:
 - a) *repeats*, i.e. a word or a phrase is repeated, usually after a pause
 - b) *restructurings*, a sentence is interrupted and rearranged after a pause, with a change in strategy but not in the meaning of the utterance
 - c) *incomplete sentences or false starts*, a sentence is interrupted and remains incomplete since the following one is characterised by a change in meaning.

McNeill (1979) defines *filled pauses, utterance interruptions* and *parenthetical sentences* as *disfluencies*, which are to be found in spontaneous speech. Starweather (1980) stated that speaking fluently does not mean speaking without pauses, it means speaking with a number of pauses and hesitations, which do not exceed the norm.

- (b) Duez (1982: 13-14) focused attention on an aspect related to pause function which had not been analysed by Magno Caldognetto *et al.* (1982), that is the stylistic function of pauses in political and casual interviews and in political speeches. The author recorded the presence of:
 - a) *silent pause*, ‘any interval of the oscillographic trace where the amplitude is indistinguishable from that of the background noise’
 - b) *filled pause*, i.e. the occurrence of hesitation interjections
 - c) *false start*, ‘any sequence of segments that is intended to start the next utterance but is interrupted and replaced by another that will get completed’

- d) *repeat*, ‘any unintended repetition of a sequence of phonetic segments that is subsequently produced in its complete intended form’
- e) *lengthened syllable*.
- (c) Hieke (1981) introduced a new approach to hesitation phenomena. They are considered as strategies to gain time or to correct already produced utterances, which means that hesitations are signals of the speaker’s willingness to control production quality. They are subdivided into *stalls* (*silent pause, filled pauses, prospective repeats and syllabic prolongation*) and *repairs* (*false starts, bridging and retrospective repeats*), both linked to the concept of *error avoidance*.
- (d) The following is a new categorisation of pauses which draws on all these studies:

Non-fluencies		
Unfilled or silent pauses		Disfluencies
Communicative pauses	Non-communicative pauses	Filled pauses, glottal clicks, audible breaths, vowel and consonant lengthening
Initial <i>décalage</i>	Hesitation pauses (non-grammatical pauses)	Parenthetical sentences
Segmentation pauses		Utterance interruptions: a. repeat b. restructuring c. false start
Rhetorical pauses (grammatical and non-grammatical pauses)		

Table 1

Non-fluencies, i.e. fluency interruptions, are divided into *unfilled or silent pauses* and *disfluencies*. Silent pauses have been subdivided into *communicative* and *non-communicative* pauses, to highlight the communicative function that pauses may have. For instance, the *initial décalage* is useful for the interpreter but at the same time it may be considered as a rhetorical device to capture the attention of the listener at the beginning of the speech. *Segmentation* pauses occur at grammatical junctures. They are used as breathing pauses by the speaker and they allow the listener to understand the syntactic structure of the discourse. The hierarchical distribution of pauses and their length help the listener to understand the relations among the components of the discourse. For instance, pauses within sentences are shorter than pauses at the end of the sentence. *Rhetorical* pauses may occur at grammatical or non-grammatical junctures, for instance within a clause or even between an article and the noun.

These rhetorical devices cannot be considered as disfluencies, since they have a precise communicative role, they emphasise the word they precede. Rhetorical pauses have not been mentioned by Magno Caldognetto *et al.* (1982) in their categorisation. The lack of controlled studies on the stylistic-rhetorical function of pauses limits the possibility for a thorough discussion of pause occurrence in different text typologies. The present study is aimed at describing pause occurrence in read formal source texts, compared to target texts produced by professional interpreters, which have the characteristics of both spontaneous and formal speech.

More formal speech is characterised by the occurrence of communicative rhetorical pauses, whereas spontaneous speech is characterised by the presence of *disfluencies*, namely fluency interruptions, which do not have a communicative role. They are due to both *micro* and *macro* on-line *planning* of the discourse.

7. Experimental Study

The new categorisation of pauses presented above (Table 1) was used in the following experimental study to find out which type of non-fluencies characterise the interpreter's output.

7.1 Aim of the study

The aim of the study is to provide a description of professional interpreters' performances in order to bridge the gap between theory and practice which has been denounced by many authors (e.g. Gile 1995, Stenzl 1989). The study is divided into two parts. The first consists of an analysis of the two source texts (STs) read at two different speech rates. The various non-fluencies have been divided into the different categories of table 1 and subsequently counted and measured. The second part consists of the recording and measurement of non-fluencies occurring in the target texts (TTs). Non-fluency occurrence in STs and TTs has been compared to detect any correspondence between the two, to understand why interpreters hesitate or pause.

7.2 Materials and methods

7.2.1 Subjects

The subjects are 11 professional interpreters, working either for the European Institutions or in the private market. To obtain a homogeneous sample, 10 out of 11 interpreters are currently teaching at the School for Interpreters and

Translators in Trieste and just one is a professional working outside the School, and thus function as a point of comparison. Yet, these interpreters have different backgrounds in terms of career and working environment; for some of them English is their B language, for others their C language. All this may have an impact on their approach to interpreting.

All of them are Italian native speakers and they were asked to interpret from English into Italian.

The lack of descriptions of professional interpreters' performances (Stenzl 1989) led to the choice of professional interpreters as opposed to students. Moreover, would-be interpreters have not yet gained the necessary experience on the ground to enable them to produce a quality performance and to develop the strategies to cope with difficulties. They would tend to resort to hesitation pauses more frequently than professionals.

As far as the communication context is concerned, all subjects were asked to interpret the texts in laboratory, that is to say in an artificial setting. In a real setting it would not have been possible to collect a statistically significant number of the same interpreted text.

The subjects were divided as follows: 6 women and 5 men. As Bühler (1985: 49) noted, the approach to non-verbal communication depends on experience and gender. Professionals with vast experience are more aware of the role of non-verbal communication. Moreover, significant differences between male and female approaches to prosody have emerged.

7.2.2 Texts

The professional interpreters were asked to translate two texts from English into Italian. The source texts were read by a native speaker, to avoid difficulties deriving from prosodic deviations linked to the pronunciation of non-native speakers. The speaker, who has developed great abilities as a public speaker, was videotaped to allow the interpreters to see him.

The speaker read the texts for the first time, hence the occurrence of disfluencies has been recorded.

The first speech was made by Ms Joyce Quinn at the Franco-British meeting in Paris, 14 January 2000; the second speech was delivered by Mr Keith Vaz at the Cambridge Union, 10 March 2000. Both texts touch upon themes such as the enlargement of the EU, unemployment, the Euro and Agenda 2000. They belong to the same genre, they are political speeches.

A week before the experiment took place, all subjects had been informed about the topic, namely international politics and Great Britain's stance on European issues. Just before the experiment, the professionals were told the precise topic of the texts, the name of the speakers and the date and place of

these speeches. The subjects were not told that the first texts would be read at a faster speech rate than the second, in order not to give any clues about the aim of the study.

7.2.3 Recordings

The performances were recorded with a Tascam recorder.

7.2.4 Transcription of texts

The transcription of texts caused difficulties because of the absence of codified and established transcription norms. Unfilled pauses and disfluencies have been signalled as follows:

(...) = pauses (Benveniste and Jean Jean 1987)

[:] = vowel and consonant lengthening

underlined = repeats, false starts, restructuring

Vowel and consonant lengthening has been signalled only to have an idea of the occurrence of this sort of disfluency compared to the others.

After careful listening, the collected material was analysed by a software program, *Creative Wave Studio 4.06*, which allowed visualization on screen and the measurement of silent pauses.

Unfilled pauses characterised by a duration of less than 250msec were not taken into account, according to the threshold proposed by Goldman-Eisler (1968).

7.2.5 Questionnaire

After interpreting both texts the eleven interpreters were asked to answer a series of questions on pause function in ST and TT. Most interpreters added comments on their personal perception of pause occurrence in ST and TT.

7.2.6 Analysis criteria

Target texts were analysed in terms of non-fluency occurrence. Disfluencies and unfilled pauses were counted and measured. Attention was focused on the following disfluencies and pauses:

Disfluencies (according to the definition provided by Magno Caldognetto *et al.* (1982):

- filled pauses, *ehm, eeh, mmh, ah*;

- repeats;
- restructuring;
- false starts;
- vowel and consonant lengthening, which are signals of difficulties linked to on-line planning and hence do not appear in the read STs;

unfilled pauses:

- ‘segmentation’ pauses, namely grammatical pauses which have a communicative function. They are useful for the speaker and the listener at the same time. A clear segmentation of the concepts allows swift recognition and comprehension. Moreover segmentation avoids the risk of overloading the audience’s attention;
- *rhetorical* pauses, occurring at grammatical or non-grammatical junctures, but having a communicative function, since they emphasise new or important information in the clause;
- *hesitation* pauses, namely non-grammatical pauses that do not have a communicative function.

Sometimes it was hard to decide to which category certain pauses belong. Repeated listening of the texts proved to be useful and particular attention was given to intonation. Contrastive analysis of pause occurrence in STs and TTs allowed the recognition of pause function.

7.2.6.1 Speech rate

There is a close link between pause occurrence and speech rate. An increase in speech rate implies a decrease in pause occurrence and pause length. The aim of the study is to analyse pause occurrence in simultaneous interpreting when there is a change in speech rate.

The average speech rate in ST was obtained by counting the syllables uttered by the speaker in 3 samples consisting of one minute each. In the first text the average is 263.3 syllables/min, in the second 204 syllables/min.

7.2.6.2 Methodological difficulties

The initial and final *décalage* in TTs has not been taken into account, since the first words of some TTs were not recorded because of technical problems.

Hesitation pauses have only been analysed from a quantitative point of view, since it is hard to define the reason for hesitating. Indeed, Salevsky (in Gile *et al.* 1997: 116) states that “it is problematic to establish a connection between the

world of ideas and the world of experience, that is to find the reason, in a concrete setting, for a particular hesitation pause”.

8. Results of the questionnaire

A questionnaire was given to all interpreters at the end of the experiment session. The aim was to compare objective data deriving from the analysis of TTs with the subjective perception of the interpreters.

When asked to assess the role of different kind of pauses in TTs, 5 out of 11 interpreters believed that hesitation pauses have a significant role to play, especially from a quantitative point of view. Some interpreters referred to this particular experiment, others referred to their experience in general. All subjects agreed that the speech rate in the first ST was higher than in the second, which meant that there was an increase in hesitation pauses. Three out of 11 interpreters said that pauses due to on-line planning have a very significant role. Ten out of 11 interpreters noted that breathing pauses are physiological aspects linked to oral production. Yet some of them state that breathing pauses cannot be controlled.

Six subjects out of 11 perceived rhetorical pauses as the least important ones. Yet when asked to assess the role of these pauses, the majority of the subjects recognised their importance in TTs. Interpreters say that they do not use rhetorical pauses very often, especially when the speech rate is too high. They noted that when the speech is delivered at an average speech rate the interpreter is involved in the text and hence the author's text becomes the interpreter's text. Moreover if the speaker is a skilled public speaker, the wise use of prosody allows the interpreter to do the same.

Professionals were further asked to explain where and why they paused. Nine out of 11 interpreters remembered at least some of the pauses in their TTs. The majority of the subjects say that they did not perceive any pauses in the first ST, since the speech rate was too high. They felt they had produced hesitation pauses only. 81.8% of the interpreters are aware of the use of hesitation pauses, which are easier to remember since they are related to the difficulties they encountered. Moreover they state that the use of pauses is more or less a mechanical, automatic process. They were not aware of the type of pauses they used, which suggests that the majority of the professionals involved had never thought about pause occurrence in their delivery.

Then the interpreters were asked if pauses in the TTs were speaker-induced pauses. Five interpreters out of 11 noted that pauses in the TTs mirrored the speaker's choice in the STs. Four interpreters agreed when asked, but argued that sometimes this was not the case.

The majority of the subjects stated that the use of pauses in TTs is aimed at conveying a message which is equivalent to the original.

Even though the subjects admit that sometimes excessively long pauses may hinder comprehension, since they have to wait longer to understand the message, the vast majority think that pauses in STs help comprehension. Hence they reaffirm the usefulness of pauses for both comprehension and delivery.

9. Results and discussion

The analysis of the two source texts provided a reference model for the analysis of target texts. In the first text there were 109 pauses, of which 80 were segmentation pauses and 29 rhetorical pauses. In the second text there were 142 pauses, of which 97 were segmentation pauses and 45 rhetorical pauses. In both texts there are no hesitation pauses, since they are read. Reading does not require on-line planning of the discourse.

Segmentation pauses are extremely important since they highlight the boundaries between information units.

As far as disfluencies are concerned, there are only 5 corrections in the first text and 4 in the second. This was related to the fact that the reader was reading the text for the first time. According to Goldman-Eisler (1968) fluency in reading can be improved re-reading the text several times.

The results obtained analysing the TTs were compared to ST results.

In 5 out of 11 TT1s the number of unfilled pauses (segmentation pauses and rhetorical pauses), which have a counterpart in ST1 was less than half the total number of pauses in TT1. In 5 out of 11 TTs the number of pauses with a counterpart in the ST1 is more than half the total number. Pauses that have a counterpart in ST1 maintain the same function, which means that often the syntactic structure remains unchanged.

As far as the second text is concerned, in 7 out of 11 TT2s the number of unfilled pauses which have a counterpart in ST2 was less than half the total number and in 3 out of 11 TT2s it is more than half the total number.

According to these results the trend is for interpreters to follow the speaker's pattern in terms of unfilled pause occurrence (segmentation and rhetorical pauses).

Hesitation pauses in TT1s and TT2s do not have a counterpart in STs. Moreover, the comparison between TT1s and TT2s shows a significant decrease in hesitation pause occurrence in TT2s. That is to say that a decrease occurs when the speech rate is higher in the STs.

As far as disfluencies are concerned, they outnumber unfilled pauses in both texts. In the second TTs there is an average increase in the number of filled pauses, corrections and vowel and consonant lengthening.

9.1 Comparison between male and female interpreter performances

In the second TT both women and men used a larger number of pauses. Women used more filled pauses and men used more unfilled pauses. Moreover, as far as pause duration is concerned, pauses in men's texts lasted longer. This means that men tended to speak more slowly than women, using pauses more frequently.

	Average occurrence of silent pauses		Average occurrence of disfluencies	
	TT1	TT2	TT1	TT2
Men	75.3	111	104.8	166.5
Women	70.2	92	124	176.4

Table 2

10. Comparison between questionnaire and text analysis results.

A very significant part of the present study is focused on the comparison between data deriving from the analysis of TTs and the personal opinions of the 11 interpreters.

Firstly, in the questionnaire the subjects were not asked to assess the role of non-fluencies in the TTs, since these aspects of oral communication have been analysed simply for the sake of a clear categorisation of pauses. Indeed, the isolation of these elements allows us to focus on pauses and their function.

Disfluencies may occur in simultaneous interpreted texts, since they are linked to difficulties related to on-line planning of the discourse, to time pressure. The time lag necessary for interpreters to organise and plan their discourse may derive from the use of disfluencies, which may be considered as time gaining devices or even as interpreting strategies. Yet the excessive use of disfluencies may disturb the listener. Moreover the use of certain kinds of disfluencies depends on the way people talk. Some people do use vowel lengthening, filled pauses, and repetition as part of their own way of speaking. Women tend to use disfluencies more than men do. Women tend to increase their speech rate, which means that pause frequency and duration are lower and disfluency occurrence higher.

These disfluencies are significant from a quantitative point of view, since in the first TTs there are on average 73 unfilled pauses and 113.5 disfluencies and in the second TTs 102.3 unfilled pauses and 171 disfluencies. Disfluencies outnumbered unfilled pauses.

Secondly, it is important to stress that the personal categorisation of pauses proposed in Table 1 is the result of the comparison between the analysis of the interpreted texts and the assessment of the professionals' personal opinions. For

instance, the category '*breathing pauses*' was considered as a physiological feature of oral production by the majority of the subjects. Most interpreters stated that it is hardly possible to gain control over these pauses, which are mechanical. But according to the literature on public speaking it is clear that skilled public speakers make these pauses coincide with grammatical junctures. Indeed some interpreters make their non-audible breathing pauses coincide with grammatical junctures without even realising it. Many female interpreters produced audible breathing pauses, which are usually considered as disfluencies, but when they coincide with syntactic boundaries they can be classified as *segmentation* pauses. Interpreters should be able to develop the necessary public speaking skills to control their breathing pauses, avoiding audible breathing and making silent breathing coincide with syntactic boundaries to aid comprehension.

As far as *hesitation* pauses are concerned, the definition in the personal categorisation did correspond with the idea expressed by the subjects. In the questionnaire a distinction was made between *hesitation* pauses and pauses due to *on-line planning* (*pause di pianificazione*), but all subjects agreed that pauses due to syntactic and lexical on-line planning are to be considered as hesitation pauses, since interpreters interrupt the smooth flow of speech to plan their discourse. Moreover it is almost impossible to decide which pauses are due to lexical or syntactic on-line planning and which are due to difficulty in comprehending the message.

In the questionnaire the interpreters were asked to assess the role of *communicative* and *rhetorical* pauses. 45.5% of the subjects believe that there is a clear difference between the two, whereas according to 54.5% of them the two concepts overlap. According to these suggestions by the interpreters and in the light of available literature a new approach was adopted. The adjective *communicative* has been used to define both *segmentation* and *rhetorical* pauses.

Going back to hesitation pauses, 45.5% of the subjects consider hesitation pauses as highly significant from a quantitative point of view and refer mainly to the experiment session. Moreover, 27.2% of the subjects consider pauses due to on-line planning very significant. Since it has been agreed that they are both hesitation pauses, this means that 72.6% of the interpreters consider hesitation pauses as a very significant feature in interpreted texts. 81.8% of the professionals believe that there is a larger number of hesitation pauses in the first TTs, because of the very high speech rate in the ST. Yet the reverse is true. There are more hesitation pauses in the second TTs. Only one professional was aware of this and said that this was due to the larger amount of time at the speaker's disposal for thinking and planning in the second ST.

Moreover all subjects say that hesitation pauses are the most significant ones in the interpreting process because they believe that they outnumber all the other types of pauses. In fact the most frequently used pauses are *segmentation* pauses.

Rhetorical pauses are another very interesting point. In the questionnaire 54.5% state that rhetorical pauses did not have a very significant role to play in these texts, since they neglect the use of these pauses in their texts. The majority of the subjects consider only very long pauses as rhetorical pauses, but in this context even very short pauses have been considered as rhetorical if their function was to emphasise certain words or concepts. Interpreters were not aware of their use of rhetorical pauses. When asked to express their personal opinion about rhetorical pauses in general, all interpreters agreed that they are extremely important as emphatic devices.

As far as interpreters' awareness of the use of pauses is concerned, it is important to note that the majority of the subjects do not remember having used segmentation or rhetorical pauses, they only remember the occurrence of hesitation pauses since they are related to difficulties. This means that sometimes interpreters pause where the speaker is pausing without even realising it. Indeed almost half of the pauses in TTs have a counterpart in STs but the interpreters were not aware of this, even though 81.8% noted that pauses in the TT mirror the speaker's choices in the ST.

100% of the subjects emphasise the importance of pauses both for comprehension and for production. A judicious use of pauses may be a useful strategy to enhance the *usability* of the interpreter's text.

As far as interpreting strategies are concerned, interpreters are required to find a certain number of strategies to cope with time pressure. As already mentioned, the use of disfluencies can sometimes be considered as a strategy. Vowel or consonant lengthening is a time gaining device, repetitions may be used to add further details to what has already been said, and so on. More frequently interpreters stop at grammatical junctures to breathe and to signal the end of a unit of meaning but then the pause becomes longer and the initial segmentation-breathing pause becomes a hesitation pause due to on-line planning. This means that sometimes it is hard to define pauses in one single category, since different functions inevitably overlap.

11. Conclusion

The aim of the study was to prove the importance of pauses in simultaneous interpreting. In order to do this it was essential to define what simultaneous interpreting is all about and to stress the role of the oral component. On the basis of these definitions the relevance of prosody for simultaneous interpreting emerged clearly. Among all the prosodic elements pauses have an important role

to play in oral production. Pauses have been described from the point of view of psycholinguistics and rhetoric. As far as rhetoric is concerned it has been shown that interpreters are required to develop public speaking skills to obtain quality performance. A careful use of voice and silence may enhance the *usability* of the interpreter's text. All interpreters involved in the experiment session emphasise the significance of the rhetorical component in simultaneous interpreting. Yet their texts are characterised by a statistically significant number of disfluencies, which may disturb the listener. Moreover, the most frequently used pauses are segmentation pauses, followed by hesitation pauses. The majority of the interpreters were not aware of the use of pauses in the TTs. It is for this reason that this study could be significant. The description of professionals' performances in this respect may enhance the interpreters' awareness of their own delivery. This means that interpreters may be helped to perceive their own weaknesses and to improve. Moreover, detailed descriptions may be used as a didactic tool for would-be interpreters.

Appendix

The following are excerpts of ST 1 and of TT 1 transcriptions. No punctuation or orthographic rules were applied. The following symbols have been used to identify *non-fluencies*:

- (...) = pauses measured in milliseconds;
- [:] = vowel and consonant lengthening;
- underlined = repeats, false starts, restructuring;

Source Text 1 (ST 1)

The UK is no longer out of touch with her partners (362) and standing alone against the tide of further integration (709) the Prime Minister said in Paris in March last year (361) 'Britain's future lies in being a full partner in Europe' (864) we want Britain to be influential and respected in Europe(709) and I believe that we now are: (903) we are forging new alliances new links across the European Union (555) in the last two months alone we have made an historic agreement with France on the future of European Defence (632) launched a Joint Initiative with Spain on promoting employment and labour market flexibility (645) reached agreement with Sweden on promoting social inclusion and gender equality (413) made a Joint Statement with Germany on EU taxation (1238) we have instigated a Step Change in our relations with all our EU partners (503) and with the applicants from Central and Eastern Europe (709) this Step Change has already brought political and economic benefits (361) both to the UK and to

Europe as a whole (439) and will bring more (1135) but that does not mean that we are blind to the challenges that Europe is facing today (619) make no mistake about it, further reform is required, (554) if Europe is to be successful in the 21st century (374) as it has been in the 20th (941) [...]

Target Text 1, subject 1:

Abbiamo ridefinito: l'approccio: e: il Regno Unito all'Unione Europea (1400) non: si tratta più di un: (485) isolamento ma piuttosto n: no scorso: è stato che il futuro della Gran Bretagna (488) eh rientra nell'Euro:pa intendiamo che: (276) la Gran Bretagna sia (257) abbia influenza e eh (589) sia oggetto di rispetto in Europa (444) stiamo: stringendo nuove alleanze: nuovi collegamenti nell'Unione Europea (534) e: (505) negli ultimi due me:si (614) abbiamo raggiunto un accordo storico della Fra con la Francia per la difesa europea abbiamo lanciato: un' iniziativa con la Spagna pe:r (305) la flessibilità del mercato del lavoro e abbiamo raggiunto accordi con: la Svezia: (466) eh (594) per l'inclusione sociale inoltre (417) abbiamo raggiunto accordi anche: dal punto di vista fiscale con la Germania (1784) ci sono stati grandi cambiamenti n: nelle relazioni con tutti i partner: dell'eum dell' Unione Europea scusate (618) e (919) questi cambiamenti hanno portato sicuramente dei vantaggi economici e politici si:a per la Gran Bretagna che per: l'Europa in generale (519) ma ciò non significa (782) eh che non vediamo le sfide future (1844) sono necessarie ulteriori riforme: (430) per raggiungere: il successo nel: XXI secolo come (330) è stato raggiunto nel XX secolo (550) [...]

Target Text 1, subject 2:

Abbiamo ridefinito: gli approccio: l'approccio britannico all'Europa (733) e la: il Regno: eh (577) Unito si è allontanato un po' dalle politiche (272) eh comunitarie (372) e eh mmh vogliamo che la eh Gran Bretagna sia eh rispettata in Europa (893) noi: eh siamo: stiamo stringendo nuovi legami attraverso l'Unione Europea (397) e: in questi ultimi mesi abbiamo stretto mmh mmh (297) rapporti con la: eh Francia (447) per eh sviluppare eh ulteriori possibilità abbiamo raggiunto degli accordi con la Svezia (5959) per quanto riguarda la parità fra i sessi e anche con la Germania per problemi fiscali (446) abbiamo: iniziato a cambiare i nostri rapporti con tutti i partner europei e dell'Europa orientale e occidentale (446) e abbiamo già avuto i primi vantaggi politici economici (322) per la Gran Bretagna e per l'Europa in generale questo non significa che: (347) eh noi mmh siamo sordi alle nuove sfide (348) ci vogliono

nuove riforme se l'Europa vorrà avere successo nel nuovo secolo come nello scorso secolo [...]

Target Text 1, subject 3

Il Regno Unito non è più eh (1080) senza contatti con i propri partner è: in favore dell'integrazione (270) il ministro ha detto nel marzo dell'anno scorso che: il futuro dell'Unione (262) è nell'essere: un pieno partner dell'Europa (285) noi vogliamo avere influenza essere rispettati in Europa e crediamo di esserlo ora (416) noi stiamo creando nuove alleanze nuovi legami attraverso l'Unione Europea e negli ultimi due mesi soltanto (339) abbiamo: concluso un accordo storico con la Francia (254) sul futuro della difesa europea iniziato l'iniziativa congiunta con la Spagna (269) nel: promuovere l'occupazione e la flessibilità del mercato dell'occupazione (494) concluso un accordo con la Svezia sul: (948) miglioramento: della: situazione sociale concluso un accordo con la Germania per eh la nuova fiscalità (350) abbiamo migliorato i nostri rapporti con tutti i partner europei (262) e anche con i candidati dell'Europa centrale (979) questo cambiamento: ha già portato benefici economici e politici all'Europa e al Regno Unito e certamente lo farà ancora (625) però questo non significa che siamo: ciechi di fronte alle sfide dell'Europa di oggi (2151) non eh eh (1141) dimentichiamo che sono necessarie altre riforme ci sono nel ci c'è bisogno di nuovi sforzi per il XXI secolo come è stato necessario per il XX (370) [...]

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