Respeaking the TV for the Deaf: For a Real Special Needs-Oriented Subtitling

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Key Words: TV subtitling, special-needs subtitling, subtitling for the deaf, SDH

Abstract

As its name suggests, "Respeaking the TV for the Deaf: For a Real Special Needs-Oriented Subtitling" proposes a new look at Subtitling for the Deaf and the Hard-of-Hearing (SDH). Drawing on the results of the VOICE project of the European Commission Joint Research Centre at Ispra, Italy, this article is the full report of the first part of SALES (Simultaneous Subtitling for the Linguistic Autonomy, Empowerment, and Security of the Deaf), a project on respeaking-based SDH for the Deaf at the San Marino National Broadcaster (RTV). The project aims at shedding some light on this very recent multimedia technique of real-time subtitle production, and at offering an in-depth understanding of both the target audience and its real needs. This has been made possible by a six-month-long research project carried out in collaboration with 197 deaf people living in the area covered by RTV. The research has first concentrated on the analysis of their social profile, so as to understand the deaf's average exposure to written language; then, a more detailed study has focused on their real linguistic competence and on their reading abilities. Thanks to this study, it has been possible to understand that the deaf, both signing and oralist deaf, read better when exposed to a written text mirroring the Italian Sign Language (LIS) structure, particularly its syntax. That is why a final research project has proved necessary to investigate the way LIS simultaneous interpreters translate the TV news at the Italian National Broadcaster (RAI). Combining the results of this last research project with those of the previous one, it has been possible to derive technical and linguistic guidelines for a good respeaking of the TV news for the deaf.

I. Introduction

The SALES (Simultaneous Subtitling for the Linguistic Autonomy, the Empowerment and the Security of the Deaf) project is the result of cooperation between the European Commission Joint Research Centre VOICE project, the San Marino National Broadcaster (RTV), the Subtitle Project of the University of Bologna, the University of Naples Federico II and the Italian National Association of the Deaf. The project is inspired by the popular Saint Francis of Sales, protector of both journalists and deaf people. In order to bridge the gap between the two, a way to convey the journalistic texts of RTV news to the local deaf population has been envisaged and then put into practice. In particular, the SALES project was divided into two main parts: preliminary research whose main aim was to understand the real needs of the profoundly deaf and consequently to produce *ad hoc* guidelines for good respeaking; and an operative part where the results of the earlier research are considered to produce real-time subtitles at the San Marino national broadcaster.

This article is the full report of the research carried out in the first part of the SALES project, thus shedding some light on respeaking, offering an in-depth overview of the real needs of the target audience derived by an analysis of their linguistic and reading skills, and providing guidelines for the second part of the project.

1. Respeaking

In general terms, respeaking is the production of real-time subtitles by means of speech recognition software transcribing a simultaneous reformulation of the source text dictated by the operator, or respeaker, to the computer. Respeaking differs from other techniques employed to produce such subtitles in its process. While stenotyping, velotyping and the so called dual-keyboard system[1] produce directly the target text using a different channel from the one used to 'receive' the source text, namely the operator's hands, respeaking is a form of isosemiotic translation (the oral-acoustic channel is used both for the reception of the source text and for the production of the target text) where the operator does not produce directly the source text, but a sort of 'middle text' which will be then "translated" into the source text by the speech recognition technology employed.

The main difference with pre-recorded intra-/inter-lingual subtitles for special needs lies in the technique employed: While pre-recorded subtitles are produced beforehand, respeaking broadcasts subtitles on the spot, with a slight editing (when possible) and with a reduced use of captions[2]. As de Linde (1996) puts it, describing pre-recorded subtitles, "(i)ntralingual subtitles highlight all slight interrelations between dialogue, written and visual, thus trying to reproduce sound information by means of non-acoustic elements while maintaining a spatio-temporal equilibrium with the images." Since "everything goes so quick while subtitling live" (Murray 2005), there is no time to "highlight the slight interrelations between" the different components of the audiovisual text to be subtitled. So less para- and non-linguistic information will be provided by the subtitler.

Another difference between real-time and pre-recorded subtitling lies in the genre of programmes to be subtitled. Pre-recorded programmes tend to have more characteristics of the written text, while live programmes will be "easier" to subtitle because of the higher amount of redundancy, typical of live output. Clearly, the difference is much more blurred than that.

There are many other variances to be taken into consideration and some genres do not fall into either of the categories: The news, for example, has some peculiarities of both. Even if they are broadcast live, the texts produced by journalists and commentators are always written to be read under very strict time constraints. Moreover, news reports are rarely really live, so the repetitions and paraphrases of any spontaneous speech are avoided. In general, respeaking (and stenotyping, velotyping, and dual-keyboard system) is used in live and semi-live[3] programmes (such as the news, parliamentary sessions, TV shows, live events, talk shows and the like) for the production of real-time subtitles while pre-recorded subtitles are used for pre-recorded programmes (films, documentaries, TV series, etc.).

From the operator's point of view, the differences are basically three. As Eugeni (2006) puts it, there are mainly three big skills s/he has to possess: phonetic, synthetic and psycho-cognitive.[4]

- *phonetic*: every single word has to be pronounced in the clearest way possible. The respeaker has to avoid what Savino *et al.* (1999) call *non-lexical events*[5], that is to say, all those non-grammatical aspects of language that may cause a bad recognition by the software;
- *synthetic*: since the deaf generally read subtitles at a slower rate in comparison to 'normal' hearers, the respeaker has to compress the source text syntactically and semantically, trying not to lose any piece of information;
- *psycho-cognitive*: a respeaker needs to have simultaneous interpreting competencies since s/he has to speak while listening to the source text.

For a more precise definition of respeaking, Gottlieb's *Semantics Turned Semiotics* (2007) can be of help. He states that all kinds of translation are to be considered both as products (the target text received by the end user) and as processes (the action of producing the target text), and that they can be analysed thanks to a special taxonomy he himself has ideated, taking into consideration many factors:

I)   Semiotic identity or non-identity between source and target texts, distinguishing intrasemiotic

types of translation from intersemiotic types;

II) possible changes in semiotic composition of the translation, which may be (a) isosemiotic (using the same channel(s) of expression as the source text), (b) diasemiotic (using different channels), (c) supersemiotic (using more channels), or (d) hyposemiotic (using fewer channels than the original text);

III) degrees of freedom for the translating agent, distinguishing inspirational from conventionalized types of translation; and

IV) presence or absence of verbal material in source and/or target texts, creating a distinction between translations that (a) remain verbal, (b) introduce nonverbal elements, (c) introduce verbal elements, or (d) remain nonverbal.

According to this taxonomy, the respeaking-product would be then a form of non-synchronous inspirational diasemiotic inter-/intra-lingual translation, since the text produced by the respeaker is a subtitled audiovisual text (diasemiotic) with subtitles appearing on the screen some seconds after (non-synchronous) the real production of the source text; as a process, it is a form of simultaneous inspirational isosemiotic inter-/intra-lingual translation, because the subtitler respeaks the text (isosemiotic) while listening to the source text (simultaneous) operating a sort of simultaneous interpreting.

At the current time, the BBC is the television broadcaster having the strongest tradition of respeaking in the world. They were the first to make use of professional respeakers in 2001 and today respeaking is used by RedBee Media[6] to produce more than half of the real-time subtitles the BBC provides. The person in charge of the training of respeakers in London emphasizes that both stenographers and respeakers try to adapt the subtitles they produce to the real needs of their viewers (Marsh, 2005), by trying to adhere to the guidelines provided by ITC[7]. However, despite the high quality of the guidelines, and the intensive work of RedBee respeakers, no systematic research has been carried out to check whether the target audience really understand their subtitles. Even though the concept of an "idea unit" is introduced, as "where a proposition or key information is given," it is simply required that "subtitles should contain a reasonable percentage of the words spoken; 'idea units' (…) should appear as a good percentage of the original; avoid 'idea units' which are unnecessary or different from the original." In another chapter, it is also suggested that respeakers "(r)educe the amount of text by reducing the reading speed and removing unnecessary words and sentences; represent the whole meaning."

In any case, the amount of words per minute and the amount of reformulation, especially, are not tackled exhaustively. In a White Paper by the Research and Development Department of the British Broadcasting Corporation, Marks (2003) says that "speech subtitlers will listen to the programme on headphones and will respeak the words, précising if necessary." In another report, Evans (2003) echoes Marks' words by writing that "the subtitler respeaks the live programme's dialogue, condensing and rephrasing the text." Again, no indication is given about how and how much to condense or to rephrase or to précis. However, according to Marsh (2005),

> you need a given time to read a full subtitle. If subtitles were always 100% verbatim it would be very hard for the deaf to read them all. We do not have a set of written guidelines but we tend not to go over 300 words per minute.

Later in the same interview, she adds:

> The news and the parliamentary sessions, being particularly fast, you have to go along with them. While, if you subtitle sport, the idea is that you describe the action you can see on the screen so you do not need to speak all the time. We chose to edit much more with sport events than with the news or the parliament.

2. The Target Audience

It is now clear that the semiotics of real-time subtitles varies according to different factors, mainly depending on the genre of the text to be subtitled and on the audience the subtitles are designed for. In particular, the

delivery speed of the subtitles and the reformulation by the respeaker have to take the target group into serious consideration. As Nord (2000) says,

> The idea of the addressee the author has in mind is a very important […] criterion guiding the writer's stylistic or linguistic decisions. If a text is to be functional for a certain person or group of persons, it has to be tailored to their needs and expectations. An "elastic" text intended to fit all receivers and all sorts of purposes is bound to be equally unfit for any of them, and a specific purpose is best achieved by a text specifically designed for this occasion.

That is the reason why an introduction to deafness, in general, and to the target-text receivers in particular is so important. As far as deafness is concerned, it is a very complex notion encompassing many categories of people differing depending on factors such as

- The amount of hearing they have lost (mild, moderate, severe or profound);
- The age they lost their hearing at (pre-/peri-/post-lingual deafness);
- The language used in their education system (sign/oral-acoustic);
- The language they speak most (sign/oral-acoustic/both);
- The culture they live in most (hearing community/ Deaf community).

Since the purpose of this article is not to give a scientific description of what deafness is, let us simply say that we can distinguish among three ways of looking at the subject: the medical, the juridical and the social (or cultural). Medically, deafness means having profound hearing loss, a physiological condition causing an inability to receive or process aural stimulation, that is, sound. Juridically, a person is considered deaf[8] only when s/he has lost more than 70 decibels of hearing[9] before the age of 12 or if s/he has lost her/his hearing because of military or civil reasons. Culturally, the word deafness refers to the social status of some

individuals who see themselves as part of the so called Deaf culture. In other words, in the first case, at least 5% of the population, mainly composed of the elderly or of people having developed hearing loss after leaving school, is estimated to have less than average hearing; in the second case, all those who have not lost more than 70 decibels of hearing or who have not become deaf because of a war, job conditions, accidents, etc., are simply considered hard-of-hearing; in the last case, just a minority of 0.1% of the total population is to be considered to be part of the (signing) Deaf culture. They are mostly either individuals who were born deaf; or became deaf during their language acquisition process (pre-lingual and peri-lingual deaf) and who have a severe or profound hearing loss; or are children of deaf parents. They use sign language as their primary language and often emphatically see themselves as not disabled, but rather as members of a culture or language minority. The great difference with oralist deaf is precisely in the use of the word D/deaf: members of the Deaf community use Deaf as a label of cultural identity much more than as an expression of hearing status, as happens with oralist deaf people, who prefer to be called deaf.

From the linguistic point of view, the culturally Deaf are considered speakers of Italian as a second language while deaf people, who consider themselves to be members of the mainstream hearing community are supposed to speak Italian as their mother tongue. It makes a huge difference to the subtitler's job whether s/he is called to subtitle for one or the other group. Since the SALES project is intended to bridge the gap between deafness, in its broadest sense, and the world of TV journalism, it has been decided to design subtitles for the pre- and peri-lingual (signing) Deaf. The research hypotheses at the basis of this choice have been the following:

- (Signing) Deaf people are linguistically those with the biggest problems with Italian, both oral and written;
- If accessibility to the TV news is offered to (signing) Deaf people, comprehension (at least) of the source-text is also guaranteed to the rest of the potential end users.

II. The Research

With Nord's words in mind, to tailor the project's subtitles to "the needs and expectations" of the pre- and peri-lingual Deaf viewers of the San Marino RTV, it has been necessary to have a clear idea of who these Deaf viewers are and to "test" their reading and comprehension skills. To get this overview, the first step has been the building of the focus group. Then having identified a sample of the potential target users and after having analysed their social characteristics, two parallel research studies have been carried out: the first one on their reading and comprehension skills; the second one, on the Italian Sign Language lexico-grammar.

1. The Target Text Receivers' Social Profile

The first research study has been carried out in collaboration with six of the ten Italian National Institute of the Deaf (ENS) provincial[10] centres of the Italian region of Emilia-Romagna in order to draw the general social profile of the potential viewer of the San Marino RTV. To this purpose, 197 deaf people[11] (10% of the local deaf population) have been randomly selected and interviewed, by means of a questionnaire. From the questionnaire, personal data[12] concerning their age, their deafness (years and degree), and their education (schooling and language) have been derived.

Age: The mean age of the respondents is 40.09 years. Against this background, 38 of them (19.29%) are people between 20 and 30 years of age; 61 (30.96%), between 30 and 40 years; 58 (29.44%), between 40 and 50 years; 26 (13.2%), between 50 and 60; 13 (6.6%), between 60 and 70; and just one 93 year-old lady (0.51%).

Degree of Deafness: As mentioned before, the Italian law recognizes a person to be deaf only if s/he has lost more than 70 decibels of hearing. Almost nobody considers him/herself to be deaf if not even the national health system does. However, people who have mild or moderate deafness may gradually lose some of their remaining hearing during their lifetime. They rarely consider themselves to be Deaf and, in any case, they are not allowed to become associates of ENS. In the focus group, 80 people (40.61%) were born severely deaf and 117 (59.39%) were born profoundly deaf. At the time they answered the questionnaire, the severely deaf were just 44 (22.34%) and the profoundly deaf 153 (77.66%).

Years of Deafness: Almost all respondents to the questionnaire and to the tests are pre-lingual deaf. Just a few remember having ever spoken. 178 of them (90.36%) have never heard, or think they have never heard, or lost their hearing during their first year of life. They have never spoken, anyway; 11 (5.58%) lost their hearing during their second year; just one (0.51%) lost his hearing during his third year; two (1.02%) lost their hearing during their fourth year; four (2.05%) during their fifth year; and just one (0.51%) during her seventh year.

Language: As mentioned before, there is a great cultural difference between (Italian) sign language (LIS) speakers/native-speakers and oral-acoustic language speakers/native-speakers. Nowadays, almost all deaf people are bilingual even if one of the two languages they are fluent in, usually the one of their parents, is more predominant. However, the results of prominent studies (Volterra, 1986) demonstrate that, from the linguistic proficiency point of view, there are very slight differences between Deaf and deaf people. The results of the present research study confirm this piece of data, showing that, as far as their reading and comprehension skills are concerned, just negligible (and non recurrent) differences have been detected between native speakers of Italian and LIS native speakers. This is the reason why Italian native speakers have not been excluded from the results. In the focus group, 118 people (59.9%) are LIS native speakers who were born to Deaf parents; 53 (26.9%) are also LIS native speakers, but children of hearing parents; and just 26 (13.2%) are "simply" deaf, speaking Italian and having been born to hearing parents. 151 of them (76.65%) are bilingual, 109 of these (72.19%) being LIS natives and the rest, 42 (27.81%), having acquired LIS later in life or considering themselves to be more proficient in Italian than in LIS.

Age of Schooling[13]: In the last century, the Italian educational system for the deaf has changed significantly. In 1880, the Congress of Milan decided that the sign languages had to be forbidden in the special institutes for the education of deaf people. After that, these special institutes adapted to the new legislation and even if they started adopting the oral system, they continued using their knowledge to teach their deaf students in Italian. During the fascist regime, Mussolini recognized the deaf as people with full rights and LIS as their mother tongue. As a consequence, more special institutes were built where it was also possible to study LIS as a

second language. In some of them, in violation of the rules imposed by the Congress of Milan, LIS was not only taught as a second language but was also used as the language of instruction in other classes. Even if the psycho-cognitive benefits to the deaf were enormous, it should also be said that the deaf community did not have any kind of relations with the rest of the society. In the seventies, because the State wanted the deaf to be integrated into the "external world," it was decided that the public educational system had to be accessible to all and that deaf people could go to school together with hearing children. As a consequence, many hearing parents of deaf children wanting their children to become "normal" started to send them to "normal" schools, and the special institutes for deaf people started to be either closed or changed into cultural associations. Since then, many deaf people have been educated in normal schools with hearing students, assisted by a specialized teacher. However, despite the great importance of the social benefits (since the deaf are no longer segregated in special institutes), and despite the economic and cultural boom of the time, the level of education of deaf people and their competence in the oral and written language have not improved so much in comparison with the past. This is due to the main factor that deaf people need a visual language to activate their communicative, psycho-cognitive processes. Moreover, many teachers are not prepared to deal with deaf people, do not know the Italian Sign Language, and have difficulties in conveying their message to the student. From the linguistic point of view, this change has created a division within the under-40 deaf population. Today, we can talk of deaf people born in deaf families speaking LIS as their mother tongue and Italian as their second language or not speaking it at all and of deaf people born in hearing families speaking LIS as their second language or not speaking it at all. The rest of the deaf population is mainly composed of LIS native speakers, whether their parents are hearing or not[14].

The focus group of the present research study is composed of two university students, 20 to 35 year-old people having received from eight to 13 years of schooling; 35 to 60 year-old people having received from five to eight years of schooling; 60 to 69 year-old people with just five years; and just the 93 year-old lady having received three years of schooling.

2. The Target Text Receivers' Reading and Comprehension Skills

After having identified the target audience from the social point of view, it has been necessary to test the audience's reading and comprehension abilities. To introduce the following tests, the analysis of which has lead to a set of guidelines for the production of target-oriented "respoken" subtitles, it is probably necessary to offer an overview of the methodology employed. To be sure that the tests were really useful to the understanding of the real needs of the respondents, it was decided to adopt a double approach. First, a *quantitative approach* was used, timing their reading speed[15] and asking them whether or not they had grasped the core meaning of the audiovisual text they had just watched. For the sake of precision, it can be said that the respondents were given the original video and a list of PowerPoint subtitles they were asked to scroll by left-clicking their mouse. The subtitles were completely dependent on the single respondent's reading speed, while the video was dependent on the subtitles: The video (and the chronometer) started when the respondent scrolled from the first subtitle, containing the title of the news item, to the second one, referring to the first sentence of the first scene. The beginning of the following scenes was dependent on the subtitle referring to the sentence introducing it: By scrolling from the last subtitle of a scene (i.e., referring to the last sentence of the scene) to the first subtitle of the following scene (i.e., referring to the first sentence of the following scene), the following scene started even if the previous one had not ended yet. Second, a *qualitative approach* was used, borrowed from reception studies in general and from the ethnographic approach to the audience in particular. Starting from the standpoint that audiences are "active producers of meaning"(de Certeau 1990) decoding media texts in ways which are related to their social and cultural circumstances and to the ways that they individually experience those circumstances, the necessity of greater insight into audiences' subtitle use became more and more evident. For this purpose, 25 audiovisual texts on different subjects of different difficulty levels were prepared as follows:

The Texts: Since the present research study has been carried out in order to find the best way possible to subtitle for the deaf viewers of the San Marino TV broadcaster's news, 25 pieces of RTV news were selected and subtitled beforehand.

Subjects: Since the news never concentrates on just one subject and since the audience may have different interests, the scope of the content was not restricted to just one subject, so all issues covered by RTV were considered: politics, economics, culture, sports and local items.

Difficulty Levels: To understand which was to be the average level to consider when subtitling, the news was subdivided into five groups, each group containing five pieces of news covering every topic, and then subtitled in five different ways: a) simple transcriptions of the original text; b) lexical[16] reformulation[17]; c) lexical and syntactic reformulation; d) lexical, syntactic, and semantic [18] reformulation; e) lexical, syntactic, and semantic 50% summary.

Then, all 197 D/deaf volunteers were filmed while watching the 25 texts and while being interviewed both individually and during group talks. From both the quantitative and the qualitative analysis, it has been possible to understand that, as usual, there is a substantial difference between what the audience says they have understood and what they have really gotten. Since the main aim of this research study is not to make an in-depth audience perception analysis, but simply to understand how and how much to subtitle for pre-lingual D/deaf accessibility to RTV news, just the data concerning the D/deaf reading and comprehension skills will be discussed.

Since the very beginning, it was clear that there are very few differences between the signing pre-lingual Deaf approach (both reading and comprehension) to the text and the oralist deaf approach. In those few cases in which variations were of remarkable importance, the main factor was intuitively their cultural background (reading habits, hobbies, age of schooling) and not their communication method. As for data, the five different groups of texts were read by all attendants obtaining the following results:

Transcriptions: Just 13 people answered correctly at least six out of ten questions on general understanding: basically, just young people who were used to reading subtitled films and had received at least 13 years of schooling. The reading speed was 3.9 seconds per line, sometimes accompanied by visible and audible subvocalization or by translation in LIS or both. Even if told not to do that, the respondent complained that if they did not translate or subvocalize they would not understand what they were reading.

Lexical Reformulations: Just 27 people answered correctly six or more questions on general understanding. The discriminating factors were the same as in the previous case. In many cases, the respondent found the words more comprehensible than in transcriptions, but many mistakes were made in understanding who does what, very probably, for syntactic reasons. The reading speed was not so different from that with the transcriptions: 3.6 seconds, with people still intelligibly subvocalizing or translating into LIS, despite the request not to.

Syntactic Reformulations: 121 people answered correctly an average of 7.4 questions out of ten. This is clear evidence that the sentence structure is of paramount importance to the understanding of a subtitle, especially if we are talking of a D/deaf audience. The average reading speed was surprisingly high: 2.74 seconds per line. Nobody subvocalized in an audible way. Nobody translated into LIS what they were reading. Just a few people signed some words they probably did not know the meaning of.

Semantic Reformulations: 154 people understood the text in a very impressive way. They answered correctly an average of 8.3 questions out of ten. Even if it has not been possible to know exactly how much the semantic reformulation influenced the general understanding of the subtitled text in question, and consequently how much the syntactic reformulation has contributed to this result, all respondents declared that they had understood the text. In the previous instance this was not the case. The average reading speed was very high, 2.51 seconds per line.

50% Summary: 163 people out of 197 (82.74%) understood the text and many of the remaining 24 declared that they had understood the text but that they were not concentrating enough to remember what was said in the text and that while they were reading they had the feeling that they understood everything. The average reading speed was slightly higher than before, 2.46.

From a first glance, it seems clear that it is not the quantitative reduction of the words that makes the text clearer and easier to read. It is the text reformulation, and more specifically the syntactic reformulation, the most important strategy to use in order to make a text more intelligible to a D/deaf audience.

As far as the reading speed is concerned, the average of 2.46 seconds per line is to be considered a very general indication. From a

deep analysis of the videos, it is possible to observe that single-line subtitles are read at an average speed of 2.1 seconds while two-line subtitles are read at an average of 2.57 seconds per line. This is a very interesting result because, despite what is said by many eminent scholars in the field, two single-line subtitles are not harder to read than a two-line subtitle. It is not claimed here that what these scholars say is false. It is undoubtedly true that a hearing viewer needs some time to realize that a subtitle has appeared on the screen and, consequently, that it takes longer to read two single-line subtitles than one two-line subtitle. However, it is also possible that a two-line subtitle overloads the mind of a D/deaf viewer. While reading, s/he may get lost in what can be perceived as an indefinite flow of words and be forced to read some words twice or to start again from the beginning, thus slowing down the reading process.

From the comprehension point of view, the analysis is clearly less accurate and more empirical. However, looking repeatedly at the videotapes and back to the texts, it has been possible to find a regularity that may be of great interest in solving some disputes related to deafness: As has been briefly mentioned before, no great differences have been found between the results achieved by signers and those obtained by oralist deaf. Moreover, it is possible to observe that all those subtitles containing sentences or phrases mirroring the LIS lexico-grammatical structure were easier to read and to understand for both signers and oralist deaf in comparison with other subtitles not having a structure similar to Italian Sign Language. [19] This finding has been particularly revealing from the reformulation point of view. Once it has been understood that a sign language is more efficient in conveying meaning to every deaf person, the hypothesis becomes the following: If every piece of news is intra-lingually translated into the written form of Italian (intuitively this is true for any oral-acoustic language) emulating the grammar of the Italian Sign Language (very similar to other sign languages) while respecting the Italian grammatical rules, the target text would be more understandable to a deaf person than any text in Italian that doesn't consider LIS at all, and consequently would be the best form of target-oriented translation.

3. The Analysis of LIS[20]

With this in mind, the next step was a quick analysis of the RAI news translated into the Italian Sign Language [21]. All regularities occurring in the translational process were noted down and compared to the Italian grammar. If the peculiarity in question could be back-translated literally into grammatically correct Italian, the solution was proposed for the intra-lingual translational process and finally evaluated. If it could not be thus back-translated, an alternative way out was proposed and evaluated. The main peculiarities of simultaneous interpretation into LIS have been subdivided into four sections:

Lexico-Morphology: LIS does not make use of grammatical morphemes. This is not an option possible in Italian because articles and suffixes are an integral part of its grammatical system. However, thanks to coordination and to a careful use of lexical morphemes to replace grammatical ones, where possible, the cognitive process for the deaf is facilitated. Apart from that, since sign languages do not make use of tropes and of schemes, deverbal nouns and peripheral stylistic synonyms are not even considered and all spoken Italian lexemes not having an equivalent in LIS are explained or disambiguated. Technical words are sign-spelled[22]. While respeaking, the following rule may be an option: Explain uselessly complicated words, but not technical ones.

Syntax: LIS follows a linear syntactical order which is peculiar to many sign languages: spatio-temporal complements-subject-other complements-verb. This is not possible in Italian, but deaf people have proven to be proficient readers in those cases where a linear spatio-temporal complements-subject-verb-other complements word order was respected. To preserve this linearity, no embedded clauses are allowed (It is preferable to use coordination to the detriment of subordination, when possible). Even the spatial and temporal characteristics of a sentence have to adhere to this concept. For instance, it is not possible to say, *"The fonctionnaire of the Italian Defence Ministry responsible for Iraq."* The same concept should be expressed by "zooming" from the geographically bigger concept to the smaller one (*ITALY, MINISTRY, DEFENCE, FONCTIONNAIRE, IRAQ*), when possible. Similarly, the sentence "*A car bomb has blown up while a US convoy was passing by*" has to mirror the sequential order of events (*AMERICAN CONVOY PASSES. CAR BOMB BLOWS UP*). The same linearity applies to the placement of declarative verbs, which cannot be in an incidental position, but have to precede the sentence they introduce. Finally, the active verb

form is preferable to the passive because of the above-mentioned dislike for grammatical morphemes: If a passive form is used, the role of the different actors within the sentence could be misinterpreted.

Semantics: As has already been said, tropes are avoided when possible. So all rhetorical figures of speech are to be rendered in an unambiguous way. Even those words which are now lexicalized expressions, but have an idiomatic origin, can be interpreted literally and often mistaken. They have then to be disambiguated. The same approach has to be applied to all those forms of rhetorical discourse everybody accepts as "normal" discourse even if they are clearly rhetorical, such as pragmatic inferences or lexical and morphological politeness.

Discourse: Generally speaking, when translating intra-lingually, no piece of information has to be lost, even if, for comprehension's sake, the discourse has to be structured in a different way. In this case, it is difficult to say how much of the original which is lost because of a different discourse structuring is really lost. Many rhetorical aspects are necessarily lost forever when translating, and in cases where the power of rhetoric is particularly strong, it is possible that somebody could claim that important parts of the original have not been conveyed. Anyway, the percentage of people who really understand the meaning of rhetorical discourse is quite low. Many deaf people, above all signing Deaf, tend to limit their understanding of language to literal meaning and show problems in decoding the meaning of even very common lexicalized idiomatic expressions, like "una valanga di soldi" (literally: an avalanche of money). Some Deaf have reacted to this very popular expression by laughing or by sympathising with the unlucky man for risking being swept away by this "golden cataclysm." So, generally speaking, it would be better for all rhetorical expressions to be explained in plain Italian.

Clearly, what has just been said is not always possible. A dilemma then arises: Is it better to repeat rhetoric, and hope that, at least, some deaf understand; or is it better to disambiguate, thus annihilating the illocutory force of the source discourse? The question remains open. In my opinion, considering the results of the research which has just been described, it would be risky to leave the original text in the subtitles because many deaf would not understand. However, there are more and more deaf people attending high school, and the possibility that they would be familiar with rhetoric is becoming higher and higher. A good option may be to explain when the power of rhetoric is not so high, and to leave the original when a disambiguation would cause a clear failure of the communicative intent. A big problem would then be to respeak (or simply to subtitle) political speech, where rhetoric is used on a regular basis, where form is sometimes more important than content, where the beauty of the speech is predominant.

III. Conclusions

The research which has just been described has revealed that an analysis of the special needs of the audience a given text is designed for is necessary for the success of subtitling in general and of respeaking (used to subtitle more "oral" texts) in particular. For the purpose of the SALES project, the following approach has been adopted: A "social" profile of the target audience has allowed us to better identify it and to explain some unanticipated phenomena in the results of further research; a quantitative test has demonstrated that two single-line subtitles are preferable to a two-line subtitle and that the target text has to be produced at a rate of 2.5-3.0 seconds per line; then, a qualitative approach has shown that a linguistic reformulation of the source text (an audiovisual piece of news covering either political, or sport, or economic, or local, or cultural issues) is crucial for its understanding by either oralist deaf or signing Deaf. In particular, a subtitle mirroring the grammar of LIS (while respecting the Italian grammatical rules) is the best way to satisfy the needs of the target audience. Finally, an analysis of the regularities of the translational strategies adopted by sign language interpreters at RAI has allowed the definition of a set of linguistic guidelines for the best practices of respeaking. While some initial experiments have proven the validity of most of the guidelines, more data are needed to support the question of how to handle rhetoric, which still remains open.

Notes

[1] Cf. www.respeaking.net

[2] Captioning is a word which is used in the USA to differentiate conventional subtitles from "text display of spoken words presented on a television or a movie screen that allows a deaf or hard-of-hearing viewer to follow the dialogue and the action of a program simultaneously" (website of the Loyola University Health System www.luhs.org/health/topics/ent/glossary.htm). It differs from interlingual subtitling because it contains descriptions on para- and non-linguistic information of the source text. In the UK, it is a synonym of subtitling.

[3] The text of semi-live programmes, like the news, is broadcast live but pre-prepared. From an hour to ten minutes before going on air, subtitlers usually receive the text of the programme they are going to subtitle. They have then the possibility of preparing themselves and the software for its broadcasting.

[4] My translation.

[5] My translation.

[6] RedBee Media is the agency producing subtitling for the BBC. Cf. Marsh 2006.

[7] The guidelines were originally published by the ITC, one of the organisations replaced by Ofcom at the end of 2003. Ofcom is the regulator for the UK communications industries, with responsibilities across television, radio, telecommunications and wireless communications services. Cf.

http://www.ofcom.org.uk/tv/ifi/guidance/tv_access_serv/subtitling_stnds/

[8] In this article, reference has been made to the Italian legislation.

[9] According to the Italian law, deafness is to be differentiated as follows: Mild 20-40 db of hearing loss; Moderate 40-70 db of hearing loss; Severe 70-90 db of hearing loss; Profound > 90 db of hearing loss.

[10] Italian territorial administration is organized into different levels of local authorities: nation, regions, provinces, municipalities and constituencies. ENS is structured into national, regional and provincial centres.

[11] ENS is an association for culturally Deaf people. However, not all associates are culturally Deaf. Some of them do not even speak the Italian sign language. That is the reason why the word deaf has been preferred (to Deaf). The research has not been altered by their presence. A quick glance at the results shows that there is almost no difference at all between deaf and Deaf, in the way they read and comprehend a subtitled clip.

[12] For the purpose of the present article just the mentioned data have been considered. The other questions asked concern job, gender, birth place, place where they live, deaf people living in their household, reading habits, hobbies and opinion on subtitles in Italy. The data have not yet been published.

[13] Since the seventies, Italian deaf people have been allowed to attend "normal" schools and the special schools for the deaf have become fewer and fewer. Nowadays, the number of deaf people acquiring sign language as their mother tongue is smaller than in the past. However, LIS is very popular among oralist deaf people, who consider it a funny, but practical and sometimes more natural way of communicating.

[14] This may seem to be a contradiction but it is not. It has been said that from 1880 LIS has been forbidden in the school system as a means for conveying education. However, LIS was not only officially taught as a second language, but it was also preferred by the deaf to Italian outside the classes. In the ENS centres it was, and it still is partially, the only language to be spoken.

[15] Only the reading speed of those who answered correctly at least six out of ten comprehension questions has been considered.

[16] Apart from context-bound words, this lexical reformulation has been carried out taking into consideration the prominent work of Tullio De Mauro (1997) listing the 5000 or so Italian words every Italian speaker is supposed to know, to use, and to understand on a regular basis.

[17] Rephrasing of the text was tried by using a meta-linguistic set of "manipulations" that allowed the respondent to have a quicker understanding of the meaning of the audiovisual text s/he would be confronted with. However, as Gambier (1992) points out, even if it seems that the same thing is said, a reformulation always produces something different from the original. Moreover, Prandi (2004) says that there is a big difference between the meaning of a sentence and the content of a message. And while the former is more or less *figé* or taken for granted among (native) speakers of the same language, the content of a message is always to be inferred here and now. Reformulation is then forcibly meta-discursive, not meta-linguistic. Even if nobody can assume that something completely identical has been produced, some first experiments carried out within the framework of the SALES project demonstrate that this set of manipulations is of great help to the deaf viewers.

[18] From a quick look at the grammar of the Italian Sign Language, it is easy to realize that sign languages do not make use of tropes and of schemes. The only word order used is the spatio-temporal complements-S-O-V order. From the semantic point of view, nothing but the "normal" or literal meaning of the words is considered. In the process of reformulation this aspect has been taken into account and all schemes and tropes replaced by more direct syntactic and semantic forms. This intuition has been enlightening for the rest of the research.

[19] All those studying deaf issues know that there is a more or less heated argument between those who support an oralist approach to the education of deaf children and those who prefer a system based on the use of sign language. Knowing that the sign language is somehow a mirror of the way any deaf person perceives a language, it is automatically counterproductive to neglect it in the educational process of a deaf child.

[20] The analysis was not deep. Since the aim of the research was not to make a contrastive analysis between spoken and sign language but simply to have an idea of the way sign languages build the information to be conveyed, 14 TV news items translated into LIS were analysed and the regularities in translation reported.

[21] An LIS grammar was used and an LIS interpreter and an LIS teacher consulted.

[22] Sign spelling is a very common practice in simultaneous interpreting into LIS. It consists of spelling a word which does not exist in LIS by means of the Italian Sign Language alphabet.

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