A Study for the Efficiency and Optimization of the Subtitles for the Hard of Hearing. The Method of Pequerrecho Subtitulación.

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Resumen

La oferta de subtitulado para sordos ha aumentado en los últimos años, pero la comunidad sorda demanda calidad además de cantidad. Hasta el momento, el subtitulado varía mucho entre cadenas y proveedores, pero no parece cubrir las expectativas de los usuarios finales actuales y no ha conseguido ampliar el perfil de los usuarios de este tipo de subtítulos, ya que no se ajustan suficientemente a las necesidades específicas de la heterogénea comunidad sorda y hacen que los usuarios sigan siendo una minoría. Este estudio, realizado con una amplia muestra de usuarios, pretende fijar pautas, eliminar malas prácticas y creencias erróneas en este tipo de subtitulado y homogeneizar el servicio para ampliar su audiencia, además de proponer nuevas líneas de investigación.

Abstract

During the last years, the offer of subtitling for the deaf and the hard of hearing increased, but the deaf community demands quality as well as quantity. Subtitles differ significantly between TV channels and suppliers, but these services do not seem to fulfill all the expectations of the final users and are unable to extend the profile of users of this kind of subtitles, as they do not adjust sufficiently to the specific needs of the heterogeneous deaf community, being used only by a minority. This study involved a wide sample of users. Thus, it is its intention to establish rules, as well as to avoid bad practices and erroneous ideas about this special kind of subtitling, in an effort to homogenize this service, in order to extend its audience, and to propose new lines of research on this subject.

PEQUERRECHO
subtitulación

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1. Introduction

Subtitling for deaf and hard of hearing people has been offered to users for many years, but it is now when it seems to become increasingly visible due to the legal requirements for accessibility applicable to broadcasting. However, it seems quality has actually been excessively set aside, compared to quantity. This is clearly proven by the several complaints of the different Spanish associations of deaf and hard of hearing people, as included in the records of the AMADIS 2010 and AMADIS 2012 Accessibility conferences, for example.

Since the foundation of Pequerrecho Subtitulación, we decided our key principle would always be quality and our priority would not only be the client, but also the final user of our subtitles. Thus, we decided to carry out a practical study that would allow us, on the one hand, to get to know the real needs of the deaf community in general, as well as to analyze their satisfaction with the subtitles currently broadcasted; and, on the other hand, to search and check a better method which would enable us to increase the number of users of this kind of subtitles and improve their quality.

As a subtitling company, we never intended to make a theoretical study, but an analysis and verification that would let us create rules and guidelines for our subtitlers and linguistic and technical checkers to follow, in order to offer a better and more homogeneous service to the final user, regardless of who takes part in each project.

After extracting and checking these guidelines, we worked for two years using them in all our real projects of subtitling for the deaf, so we had the chance to improve these techniques sorting out the challenges and difficulties of professional subtitling and to verify their adaptability to different kinds of audiovisual content.

2. Practical study about the opinion of the deaf and hard of hearing users

Due to its nature, any study on subtitling for the deaf should consider parameters that belong exclusively to this typology (cf. De Linde, 1996; Arnáiz, 2012). Thus, although some of its elements are common to other kinds of subtitles, it requires the consideration of the final user specific needs, which goes beyond the inclusion of ambience sounds. Therefore, it is essential to corroborate the efficiency of the different techniques with the user who actually needs these subtitles to understand the audiovisual production.

2.1. The workshops and the sample of users

To carry out this study, we contacted different hearing professionals who communicate with deaf people every day and the FAXPG (Federation of Galician Deaf Associations), which was very interested in our project and provided us with the sign language interpreters we needed for the workshops we organized at the Associations of Deaf People in Santiago de Compostela, Vigo, Ferrol and Ourense. The videos used at the workshops were specifically provided by the Galician public television (TVG) for this purpose.

In each workshop, we handed over question forms to the attendees, in order for us to know if they usually used subtitles on TV and if they were able to read them. Then, we showed them several subtitled audiovisual contents, both in Galician and Spanish, with dialogues of different levels of speed and

complexity. This way, we intended to find out the attendees' opinion about the subtitles they could find on TV and test our own subtitling method. To do that, we asked them a number of questions to generate debate and we realized they seemed to feel much more comfortable expressing their opinions and real capacities talking to other members of their own community.

Thanks to these workshops, we gathered a sample of 70 deaf people between 18 and 65 years old. Among the attendees, there were sign language speakers and non-sign language speakers with very different reading capabilities, so we believe this study is a good indication of the functionality of these subtitles for the deaf community in general.

2.2. Verification of the Subtitling Method created by Pequerrecho Subtitulación

The great involvement of the deaf people who took part in each of our workshops allowed us to meet our objectives in an overwhelming manner, as we could confirm that the subtitling method we have been using since then lets them read the subtitles so easily that all of them could enjoy the audiovisual production, not only those individuals who already used the subtitles available on TV, but also those who could not use them until now because they could not get to read them completely.

Besides, we wanted the users to tell us whether they could find or not any apparent difference between the subtitles for deaf that are currently available on TV and those we had just shown them and the results were amazing: despite being able to read these last subtitles perfectly, they could not find any evident differences, so the methods used to ease the understanding and reading of the subtitles were not perceived by them. Furthermore, when showing the videos without audio, we realized those adaptations went unnoticed even for the sign language interpreters.

Subsequently, we explained the attendees all the adaptations made in those subtitles and none of them expressed any inconvenience for those changes, as without any omission, censure or summary of information, they provided them with a better access to the content of the videos, even at points with especially fast dialogues.

3. Comparison with the UNE 153010:2012 Regulation

The subtitling method created by Pequerrecho Subtitulación takes the UNE 153010 Regulation of 2003 as a starting point, as it was applicable in Spain when this investigation started. As we will see in subsequent sections, our method differs with the Spanish regulation about some habits and uses disapproved by the users who took part in the aforementioned workshops. Nevertheless, considering that the current Spanish applicable regulation was approved in 2012 and that it is a review of the previous regulation of 2003, the following section will show the common elements between our subtitling method and the applicable Spanish regulation.

3.1. Common elements

The Spanish regulation constituted a good starting point to investigate the rules that would allow us to optimize the subtitles for the deaf. Thus, we respect the use of colors to identify the different characters considering their relevance in the story and we totally agree with placing the subtitles with dialogues in the lower central part of the screen, except when they would cover important information, in which case, we would momentarily move them to the upper central part of the screen. We use similar guidelines to divide the subtitles in two lines and accept the use of a maximum of two lines per subtitle, but not the chance to use up to three lines in exceptional situations, as a three-line subtitle would invade the screen excessively and it would be difficult to read that much text and follow the action of the video at the same time. Also, the dialogue of each character should be represented in a different line, and suspension points should never be used to indicate that a sentence does not begin or finish in a given subtitle. In fact, the grammatical and orthographical criteria of any subtitle should always be that established by the Royal Academy of the Spanish Language or its equivalent for each language, as any mistake would confuse the audience. This means the text in the subtitles should be written and punctuated just as that in any other written document.

Just as the Spanish regulation establishes, the context information should be represented in brackets, in capital letters and in the same position used for the dialogues, but we will always try to avoid redundancies. We must keep in mind that the deaf spectator is paying attention to the image, so, for example, if we can clearly see a character crying or laughing, there is no need for that to be specified in the subtitle.

The subtitles that indicate the sound effects, meaning the ambience sounds, not produced by any of the characters or by an unidentified character, are placed on the upper right part of the screen and expressed by nouns (for example: “cry”, “bell”, “music”). The fact of the text being on that part of the screen means it represents a sound, so it is not necessary to use expressions like “the bell rings” or “somebody knocks on the door” or to write it in brackets either.

4. Specific Needs of the Deaf User

Neves (2005) puts forth that subtitles should offer as much speech and acoustic information as possible, in the clearest way possible and all of that in perfect synchrony with the video and with an adequate tempo that allows reading. As long as we do not take it to the extreme of redundancy and saturation of text on screen, this statement defines the main requirements that subtitles for deaf people should accomplish. But how can we meet these needs in an efficient, homogeneous and objective way?

4.1. Effectiveness of Literal Transcription

The Spanish regulation stands up for the literalness of subtitles, specifying that no figurative meanings should be explained and that the subtitler can only decide to make an adaptation in those cases when the speed of the dialogue is fast or if the sentences are too long. Other authors defend that many users can use subtitles as a complementary help to lip reading and, if they differ, the user might get confused (cf. Kyle, 1996). However, Neves (2005) dismisses this argument, as there are few programs with visual treatments that allow an effective lip reading, which is not feasible either for dubbed programs.

However, the fear to loss or censure of information, apart from political issues, caused the demand of literal transcriptions of dialogues as subtitles by some sectors of the deaf community. Considering this statement, we must keep in mind that the heterogeneous nature of the deaf community makes the use of literal transcriptions unadvisable, as stated by Arnáiz (2012) and Neves (2005) and as proven by researchers like Sancho-Aldridge and IFF Research Ltd (1996), because only a minority of deaf people gets to understand them and they do not take into account the specific understanding needs of the possible users. This fact led to the utopian defense of the need of more than one kind of subtitling available depending on the reading capacity of the deaf users. This is clearly not an option considering the high costs it would imply.

4.2. Adaptation

Once we have dismissed the effectiveness of literal transcriptions, we should explain what "adaptation of subtitles for deaf people" means. To do that, it is necessary to establish those aspects that pose a greater difficulty for most of the hard of hearing people. In this sense, Neves (2005) explains that the text should be directed to its final user and that subtitlers are hearing people who hardly ever have any real knowledge of the cognitive and social environment of their target audience, whether it is due to the lack of specific training or to the fact that they ignore that the users of this service do not share their own language and/or culture. Thus, it is not enough to consider which information would a hearing person need in case they suddenly could not hear anymore. It is necessary to know how deaf people process information and which are the main problems that they have to face. In this case, the subtitling method used in this study focuses on accelerating the cognitive understanding process rather than just speeding up the reading process. That is, it is not just a matter of having enough time to read the subtitles, but also to understand them. As Gutt (1991) puts it, it is about providing the intended interpretation without putting the audience to unnecessary processing effort.

It should be noted that, given the heterogeneous nature of the deaf community, not all the possible subtitle users have the same level of education, reading, understanding and usage of language, for example. In this sense, the subtitles for deaf people are always aimed to a very specific user profile: oralist users with a medium-high level of literacy and high reading capacities (cf. Arnáiz, 2012). This fact restricts tremendously the access of other members of the deaf community to the subtitles currently offered. Although it is true that certain users are reluctant to rephrasing of subtitles to make them more available for sign language users (cf. Lorenzo, 2010a; Pereira, 2010), creating subtitles just for the elite of this community discriminates against all the other members of such community.

Adaptation should never include any kind of omission, summary, censure or alteration of information nor any sort of vocabulary simplification, so that the users who already have access to the current subtitling services on TV would also take advantage of this method, as it guarantees a better quality in subtitles, thanks to a greater attention to detail, to the different guidelines followed to ease reading and understanding and to a thorough checking process.

4.2.1. Interpretation of figurative meanings and metaphors

As we can draw from authors like Quigley and Paul (1984), deaf children lack a base of substantial knowledge as well as inferential skills and understanding of figurative language, and they often have problems too with other linguistic skills which develop automatically in hearing children. This does not mean deaf children are less intelligent than hearing children, just that they start learning reading with less developed language understanding skills, due to cognitive, linguistic and experience deficits. In the article Myklebust wrote in 1964, it is stated that deaf people have problems to understand abstract ideas and there is also an extensive bibliography about their troubles to understand metaphors (cf. Iran-Nejad, Rittenhouse and Morreau, 1981; Rittenhouse and Kenyon, 1991; Gilbertson and Kahmi, 1995; Wolgelmuth, Kahmi and Lee, 1998). In fact, deaf subjects tend to understand metaphors in a literal way (cf. Johnson and Myklebust, 1967; Furth, 1973; Boatner and Gates, 1975; Conrad, 1979; Takashi, 1999). Thus, for example, if our feet hurt because we have walked for a long time and we say, "My feet are killing me!", it could be literally understood as "I'm going to die because of my feet", instead of, "My feet hurt really bad". Therefore, in order to try to understand these metaphors and figurative meanings, the user must make a greater effort and waste more time than available when watching a subtitled audiovisual production, so it is necessary to substitute this kind of expressions for their literal meaning, always keeping the nuances and the tone of the original script.

4.2.2. Complex syntactic structures

Schmitt (1968) states that most of the reading problems of deaf people are due to the fact that their internalized linguistic structures are different to those used in the oral language and, according to Thompson (1927) and Brasel and Quigley (1975), these problems are particularly relevant in the case of people with prelingual deafness. Among the elements that constitute a complex structure are relative clauses, passive voices and complements (cf. Neves, 2005).

Consequently, whenever possible, we will try to simplify those complex structures trying to make that adaptation in the less traumatic way, without summarizing or changing information. It is also necessary to keep, at all times, the coherence and cohesion of the text itself and of the text with the video (cf. Mayoral, Kelly and Gallardo, 1988). This will ease the process of reading and understanding the subtitles as it avoids confusions that would make the spectator lose concentration and, therefore, waste time.

4.2.3. Conjugated verbs

For all those people who work regularly with deaf and hard of hearing people, particularly as language teachers or sign language interpreters, it is well known that most members of the deaf community have problems to understand verb tenses and deduce the elliptical subject out of the verb (a usual feature of Spanish language). This is clearly documented by several empirical studies (cf. Rivera, 2008; Herrera, Puente, Alvarado and Ardilla, 2007).

Stockseth (2002) affirms the deficit in understanding of verb tenses shown by deaf subjects could be explained by the lack of codification of those functional morphemes, particularly because of their position at the end of the word. In fact, this phenomenon is also present to a greater or lesser extent in other languages, as proven by the study of Liechtenstein (1998), where subjects did not codify the gerund

morpheme "-ing" of the present continuous tense in English. This author also states that some of the subjects in that study even admitted they did not pronounce the end of some words when speaking.

To overcome this difficulty, we will use, whenever possible, simple verbal tenses and we will always specify the subject in the sentence (which is often omitted in Spanish). It should be remembered that all these techniques are aimed to speed up the comprehension processes and, therefore, even if they imply the use of more characters, the time needed to read and understand the subtitles will be reduced. This would not be a problem either if we start taking advantage of the possibilities the DTT offers in terms of subtitle broadcasting, which allows us to use more characters (up to 42 per line in exceptional cases) and to omit the black box that covers part of the image on the screen. The letters can be perfectly differenced from the colors on the screen thanks to a black outline which is already being used by many TV channels.

4.2.4. Third-person pronouns

There are many studies that point out the problems of deaf people with pronominalization (cf. Quigley and Paul, 1984). The first-person and second-person pronouns are easier to identify, but both singular and plural third-person pronouns can be a further difficulty, partially, because of the influence of sign language.

When using sign language, people are identified by their own name. If, suddenly, instead of saying "John", we refer to the same person as "he", it might be understood as a reference to somebody else, somebody the deaf person does not know yet but, definitely, not John. As we could verify in our investigation, the use of the person's name instead of a singular or plural third-person pronoun allows a comfortable reading of the subtitles by deaf people who usually cannot use them.

5. Technical aspects to ease reading

Besides all these adaptations focused on accelerating the comprehension of the text in the subtitles by a greater number of deaf users, there are also techniques we can adopt to speed up the process of reading and finding subtitles on screen, and this not only for deaf and hard of hearing people, but also for users of interlinguistic subtitles.

Time spent reading subtitles increases proportionally with the speed of the subtitles' ins and outs and the audience gives priority to the text, so they stop paying attention to the action in the video (Jensema, Skarkawy, Danturthi, Burch and Hsu, 2000). Thus, subtitles should be created in such a way that they can be comfortably read while paying attention to the video.

5.1. Synchrony and time on screen

According to the Spanish Regulation UNE 153010:2012, the appearance and disappearance of the subtitles on screen should coincide with lip movement, time cuts and voice or audio information. Besides, the ITC standards (1999) establish that the time cuts usually reflect the beginning or the end of a speech and, therefore, the subtitler should try to insert the subtitle in a time shot when it is in synchrony with the speaker. Neves (2005) agrees and observes that the subtitles of productions with several time cuts will have a faster tempo and will require a greater effort both by the spectator and the subtitler.

However, quotidian practice and experience with different types of productions and, therefore, with several methods of scene treatment, allowed us to verify that this rule about the time cuts often goes against the legibility of the subtitles. First, we must consider the fact that the voice does not always respect time cuts, so we cannot follow these indications unquestioningly to the point of leaving out information. On top of that, even if the voice disappears with the time cut, if we take the subtitle out of the screen before it can be read, it is useless, as it does not accomplish its purpose, producing anxiety and confusion. Thus, the time cut is a secondary aspect in our synchronization method.

The subtitle should appear on screen coinciding with the exact moment when the voice starts, but it should stay on screen a bit longer than the voice in order to guarantee reading. In addition, we must get the audience used to a comfortable rhythm of appearance and disappearance of the subtitles, so it is necessary to establish a minimum timeframe between the end of a subtitle and the beginning of the next one. Also, even if a subtitle is short, the minimum time of exposition on screen should be one second. We should also take into account that not every word requires the same time to be read: even with the same number of characters, words that are more commonly used are read faster than, for example, technical terms or proper names.

5.2. Preferential use of two lines

Some authors (D'Ydewalle, Van Rensbergen and Pollet, 1987) prefer the use of two lines per subtitle because the audience wastes less time shifting their look from the subtitles to the image and viceversa and this increases the amount of time available to read. The subtitling method of Pequerrecho Subtitulación also prefers the use of two lines per subtitle, even if the total number of characters allows the use of just one. This way, the text is more centered and, considering that the action of the audiovisual production is usually shown at the center of the screen, the eyes will have to move a shorter distance to find the text and go back to the image compared with those productions with long, one-line subtitles, which make us constantly go from one extreme of the screen to the other. In addition, in this investigation, we have confirmed that this technique allows us to significantly reduce the reading time in comparison to those subtitles with one single line, because the audience can also find the subtitles faster when they are as centered as possible.

Jensema et al. (2000) prove in their study that the general tendency is to always look at the center, then to find the beginning of the subtitle and, after reading it, to look at the image again until the appearance of the next subtitle on screen. If we get to reduce the reading speed needed and place the information at the center, as close to the action as possible without overlapping it, we will also help the audience to read the subtitles more comfortably, so that they have enough time to follow the image and, therefore, enjoy the audiovisual production.

5.3. Use of hyphen

Neves (2005) explains that, in Spain, there is an incoherent use of punctuation marks to identify different speakers and that each TV channel seems to apply its own rules. This author suggests that subtitles should use the same punctuation conventions used for any other kind of written text, just as it happens in

countries like Portugal, as a means of easing the reading of the dialogues. The attendees to our workshops corroborated this statement, as they suggested the hyphen should be used just like in any other kind of text. Thus, the method of Pequerrecho Subtitulación uses the hyphen (always followed by a blank space, which allows a faster identification of the next word) in both lines when two characters speak in the same subtitle, regardless of the color assigned to each character.

6. Ineffective adaptation attempts

There are many studies and regulations that propose different types of adaptation. Here, we mention some of those that we had the chance to check during this investigation and that were rejected by the sample of users taking part in this study.

6.1. Indication of voice nuances

To indicate those features that conform the way a character speaks or the tone of their voice, if considered necessary, the current Spanish regulation suggests that this clarification should be made in capital letters and in brackets sharing the same position of the dialogue. For example: "(STUTTERS)", "(WHISPERS)", "(IRONIC)"... This study fully agrees with the Spanish regulation in this aspect, but here we include those cases when it is necessary to indicate that a voice comes from off screen, instead of using italics, as it always takes a little longer to read them.

6.1.1. Emoticons

This technique, recommended by the previous Spanish regulation and other authors (cf. Pereira and Lorenzo, 2005), seems to be too subjective, as Neves (2005) confirms, explaining the different uses of the same emoticons in different countries. Also, emoticons require further interpretation by the users of the subtitles and this translates into more time to understand the subtitles.

6.1.2. Line breaks and literal representations

De Linde and Kay (1999) suggest that sarcasm or irony should be represented by (!) and (?) at the end of the subtitle. This option was discarded, just as other similar proposals, because its use in written language is not common and its meaning is very little known. Thus, users would also need to decipher it.

We also exclude the technique of De Linde and Kay (1999) about the use of line breaks combined with suspension points at the end of the first line and the beginning of the second line to indicate hesitation pauses (cf. Pereira et al. 2005) because of its subjectivity. In fact, the users who took part in the study rejected any use of signs or symbols in subtitles that might differ from the uses specified by the Royal Academy of the Spanish Language, as this kind of special use would require a previous explanation of its interpretation so that the average user can understand the text. Thus, the use of # to represent songs and the use of an image of a musical note are excluded, as this last option is not recognized by most software used to broadcast subtitles. This is also applicable to the orthotypographical representation of stutter (for example, "B-b-b-but you don't k-k-k-know that"), suggested by the previous Spanish regulation and also

by other regulations and studies (cf. BBC, 2009; Pereira et al., 2005), as it confuses the audience and slows down the reading process.

6.2. Abbreviation

The applicable Spanish regulation accepts the use of abbreviations in the characters' identification tags. Once again, a deductive process is required to identify the abbreviation with the complete name of the character every time it appears on screen. This would confuse the audience and make them waste time. Besides, if, for any reason, the spectator cannot see the beginning of the video or does not see the tag that identifies the name of the character with the abbreviation, the understanding of the subtitles would be even more difficult.

7. The relevance of checking

In addition to all the above mentioned, many of the mistakes found in professional subtitling are due to a lack of checking. Therefore, it is easy to find spelling, grammatical and punctuation errors, as well as errata, lack of coherence in color assignation, subtitles omitted... Many of these mistakes can be avoided if a professional other than the subtitler exhaustively checks the work. In our case, Pequerrecho Subtitulación has three different people working in each project: a subtitler, a language checker and a technical checker.

Besides the aforementioned lack of checking, some of these mistakes and inaccuracies regarding the regulations of the Royal Academy of the Spanish Language are deliberate. This is the case of the use of suspension points by some TV channels to show that a sentence does not start or finish in a given subtitle or the use of interrogation and exclamation marks only at the end of a sentence, which is an absolutely wrong use in Spanish. We also advise against the use of brackets for the text of the dialogue; in the cases where the use of brackets would be required, it is better to use commas or even rephrase the sentence.

Synchronization mistakes are very common and due to different causes. Sometimes, they are a consequence of the carelessness of the subtitler and they could be sorted out by simply paying more attention and by doing a careful checking. In some other cases, they are caused by technical problems occurred during the subtitle broadcasting or by the fact of the video used by the subtitler being different from the broadcasted video.

8. Future lines of research

Considering the results of this study and the fantastic willingness of the deaf people who took part in it, Pequerrecho Subtitulación will go on organizing this kind of workshops to evaluate subtitles and search for new formulas to optimize our service with adaptations like those mentioned above. Additionally, we intend to quantify more precisely the percentage of members of the deaf community who can use subtitles with the method of Pequerrecho Subtitulación and to find out more about their specific needs, because, undoubtedly, this information will also contribute to increase the range of our possible target audience.

Regarding the adaptation of subtitles, we believe it would be interesting to study in depth the understanding of metaphors and figurative language, as well as the pronominalization of direct and indirect objects. Syntactic structures may present an interesting challenge, just as the investigation of Stockseth (2002) confirms, showing that the order of the parts of a sentence itself can be a relevant obstacle to understand it correctly.

As for the technical aspect, it would be beneficial for this sector to analyze the adequacy of the subtitle broadcasting software and to suggest some upgrades so that it allows the use of certain symbols or the overlapping of subtitles with no need for them to appear on screen at the same time, which is sometimes necessary to indicate dialogue and ambience sounds at the same time, for example.

9. Conclusions

This study provided us with very relevant information about the needs of the final users of subtitles for deaf people, which allowed us to offer this service to subjects who cannot usually use them. To do this, we make an adaptation that is much less traumatic than it may seem *a priori*, which is evidenced by the unanimous approval of these measures by the attendees to the workshops, regardless of whether they already used subtitles regularly or not. It must be remembered that the subtitling method of Pequerrecho Subtitulación does not include or accept any kind of simplification of vocabulary, modification of the register, omission of information or censure. We simply ease the access to the audiovisual work using techniques that contribute to speed up the cognitive understanding process and that help to make reading more comfortable and faster so that the user can enjoy the production, while paying attention to the image at the same time.

As well as confirming the efficiency of this method, we have also created internal guidelines and regulations that allow us to homogenize all our projects, despite of the fact that they are made by different subtitlers and that all the projects go through both language and technical checking processes, carried out by professionals other than the subtitler.

The attendees to our workshops were not only unanimous in accepting our subtitling method, but also in rejecting any use of symbols and punctuation marks different to that established by the Royal Academy of the Spanish Language. In fact, they even told us several times that they did not understand why they had to learn a linguistic regulation to read and write and another one to understand subtitles. The logical choice, then, would be to always use the official regulations for each language. This demand of compliance with the established guidelines includes grammatical and orthographical correction, coherence in the assignment of colors, etc. That is because any infraction of these established guidelines

can cause confusion, slow down the reading and understanding processes and also produce mistrust in the accuracy of all the subtitles. This requires the implantation of a working system that includes the aforementioned checking processes made by professionals other than the subtitler, as there is no doubt that a single person cannot provide enough quality guarantees.

The results thrown by this study set out many interesting possible fields of future research that might identify new formulas to optimize subtitling. Besides, it would be a significant step to improve the quality, uniformity, regulation and objectivization of subtitles for deaf people, as well as to achieve an important extension of the number of users that might benefit from subtitling.

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