COMMUNICATION & SOCIETY

Victoria García-Prieto
https://orcid.org/0000-0003-4973-7583
vgarcia8@us.es
Universidad de Sevilla

Ignacio Aguaded
https://orcid.org/0000-0002-0229-1118
aguaded@uhu.es
Universidad de Huelva

Antonio Daniel García-Rojas
https://orcid.org/0000-0003-2997-1065
antonio.garcia@dedu.uhu.es
Universidad de Huelva

Diversity and public television: analysis of subtitling as an accessibility service

Abstract

The present article addresses media pluralism from a critical perspective, as a guarantor of attention to social and cultural diversity. The study focuses on deaf individuals, and an analysis is conducted of subtitles as one of the services that guarantees universal access to the contents offered by Spanish Radio and Television (Radiotelevisión Española, RTVE) for social and cultural diversity. Likewise, given the changes in audiovisual consumption in the form of streaming, and the rise of on-demand content, an analysis is not only performed of linear television, but also of live online and on-demand content. For this, a quantitative analysis was performed of a random sample of more than 5000 RTVE programs (2017–2018), to establish the number of subtitled programs for deaf individuals, their schedule, and the types of contents that included this service. Also, a qualitative analysis was performed on a sample of 72 programs distributed among the different channels belonging to this public corporation. Lastly, to evaluate the quality and suitability of the subtitles, an online survey was provided, which was completed by 183 deaf individuals who were users of the RTVE subtitles. Through this combination of methods, we were able to analyze and evaluate the cultural pluralism of RTVE through the subtitles provided for the deaf, associating it with the defense of the fundamental right of freedom of expression and social inclusion, values that must be guaranteed in democratic societies.

Keywords
Deaf people, subtitles, public television, social inclusion, pluralism.

1. Introduction

1.1. *Cultural pluralism and social inclusion*

Although media pluralism has traditionally been studied as a matter of media concentration or the representation of diverse political ideologies in communication media, the present article addresses pluralism from a broader perspective, as a guarantee of attention to social and cultural diversity. The study focuses on deaf individuals, analyzing subtitles as one of the services that guarantees universal access to the contents provided by Spanish Radio and Television (RTVE), along with sign language. Within the cultural and linguistic diversity of the deaf, subtitles are directed towards those who learned spoken language as their first language,

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or those who are bilingual. On its part, aside from being a service of accessibility, sign language is the natural language of individuals who are part of the deaf community, and is also their main cultural characteristic (Utray & Gil-Sabroso, 2014).

Siapera (2010, p. 5) argues that diversity is also mediated, as "it is constructed, (re)-presented and experienced through communication media." Likewise, Miguel de Bustos (2004) states that pluralist media contribute towards cultural diversity and promote social and cultural change, facilitating access to vulnerable groups. Pluralism is defined as a critical concept in itself (Karppinen, 2012), which argues for the need of a system of plural media that reflects diversity in society and that guarantees universal access to the media contents as a manner of social inclusion.

The European Commission (2009) distinguishes five types of pluralism in communication media: 1) cultural; 2) political; 3) geographical/local; 4) media ownership and control, and 5) media types and genre. The present article focuses on the latter (media types and genre), as it specifically analyzes accessibility in public television. However, the main type of pluralism involved in the object of study is cultural, which refers to the access and representation of the diverse social and cultural groups in communication media (Labio, 2014), defines it as:

> Cultural pluralism in the media refers to the fair and diverse representation of and expression by (i.e., passive and active access) the various cultural and social groups, including ethnic, linguistic, national and religious minorities, disabled people, women and sexual minorities, in the media (European Commission, 2009, p. 12).

This definition is fundamental, as it directly mentions the collective of individuals with disabilities, and encompasses its media representation, as well as its access and participation in communication media. It explicitly states that all the individuals who shape the social fabric need to fully participate in cultural life, and for this, the guarantee of universal accessibility is necessary (Jiménez & Soler, 2015; Rimmerman, 2012; Snyder, 2005). This accessibility must be applied to diverse products, environments, and services, among which we find communication media.

On the other hand, we must consider that the Spanish Constitution (Article 20.1.3) clearly states the right to receive truthful information from any means of diffusion, as well as the fundamental right of freedom of expression (Article 20.1.a), as it includes the right to receive information in equal terms and without any type of discrimination. This has been recognized for decades in international guidelines, such as the Universal Declaration of Human Rights (United Nations, 1948), and the Convention on the Rights of Persons with Disabilities (United Nations, 2006). Lastly, it is also found in national laws such as the General Law of rights of persons with disabilities (Royal Legislative Decree 1/2013) and the General Law of audiovisual communication (Law 7/2010), both of which recognize the rights of persons with disabilities, to universal accessibility of media content and its importance for the achievement of social inclusion. Therefore, it is about the promotion of cultural pluralism in communication media as a manner of guaranteeing a fundamental right in democracy.

Different studies have indicated that the subject of media accessibility preoccupies the scientific community and the people who need adaptations for accessing information in equal terms (Valdés-González *et al.*, 2021). More specifically, among the existing communication media, the role of television is highlighted as an entity that shapes public opinion, and as the most popular type of media (Bachmeier, 2014), marked with a function of social inclusion from its origins (Blumler, 1993; Manfredi, 2008; Utray & Gil-Sabroso, 2014). Without a doubt, television subtitles reduce the barriers for access to culture, information, and entertainment (Cambra, Silvestre & Leal, 2015), thereby promoting equality and the advancement of deaf people in society (Wurm, 2007; Valdés-González & Martín-Antón, 2020). In Spain, there are

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more than a million people with hearing disabilities, who could benefit from the incorporation of this service to different types of audiovisual contents (RTVE, 2014).

The present study is centered on RTVE because, as a public media enterprise, which includes TVE –with its different channels–, one of its main functions is to guarantee universal access and attention to diversity and minorities (Barnett, 2007; Bustamante, 2008; Iosifidis, 2007). The representation of plurality, the integration of minorities, and the commitment of no-discrimination towards people with disabilities, are also included in Law 17/2006 of state radio and television; and the Framework Mandate of RTVE also adds the obligation of content accessibility. Likewise, given the rise of SVOD (subscription video on demand), and the changes in *streaming* audiovisual consumption (National Commission of Markets and Competition, 2018), the present study not only analyzes the accessibility of RTVE in linear television, but also in live online and on-demand content found in its webpage.

Thus, the main objective of the present study is to analyze and evaluate the cultural pluralism of RTVE through the subtitles provided for deaf individuals, associating it with the defense of the fundamental right of freedom of expression and social inclusion, understood as values that must be guaranteed in democratic societies. For this, the present study will analyze the accessibility of RTVE content in linear television, in their live online broadcasts, and on-demand programs, through a quantitative analysis, to verify if they meet the minimum standards established by law. Likewise, through a qualitative analysis, we will study the quality of the RTVE subtitles provided for deaf people, and its adaptation to the current AENOR standards. Lastly, the article will evaluate the quantity and quality of the RTVE subtitles through the use of a survey provided to deaf people who utilize this accessibility service.

1.2. Subtitles for the deaf and hard of hearing (SDH)

Presently, accessibility is no longer understood as the creation of content or channels that are specific for persons with disabilities, but as the implementation of specific services so that the same audiovisual contents become valid and accessible for everyone (Neves, 2007). More specifically, subtitling consists on offering, generally at the bottom of the screen, a written text that includes the spoken dialogues and the discursive elements that form part of the picture (drawings, legends, etc.) or the soundtrack (songs, background sounds, etc.) (Díaz-Cintas, 2020).

We must begin with an analysis of subtitles for deaf people, which, aside from the spoken dialogues, must contain other elements such as sound effects, music, or the identification of characters so that the deaf individuals can follow the argument, just as those who can hear (Ivarsson & Carroll, 1998).

In Spain, the first subtitles for deaf people were broadcasted by the Catalan Television Corporation (CCRTV) in 1990, and months after, these were included in the RTVE content (Orero, Pereira & Utray, 2007). This service was sporadic during the first few years, until becoming a regular fixture, increasing progressively, especially after the approval of the General Law of audiovisual communication (Law 7/2010). This is the norm considered in the present study to verify if the legal requirement is met, which is the subtitling of 90% of the programs for public channels without distinguishing among their types. The draft of the new audiovisual law, which is yet to be approved, maintains the same minimum subtitling percentage for the public television services, but also states that the minimum percentage must also be included in the programs broadcasted in prime time, and other demands such as compliance with quality standards. Also added are the mandatory accessibility to other non-linear broadcast formats, as opposed to the current law since 2010, which only applied this rule to the TDT.

Lastly, it is necessary to mention the special relevance of subtitling in children's programs, as they are destined to an especially vulnerable and protected audience. Deaf

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children are forced to be more active when interacting with the television, because, aside from looking at the images, they must read the subtitles to access the same information as those who can hear. Nevertheless, studies conducted for many decades have shown that their reading skills, on paper and screens, are inferior to those of the same age who can hear (Zárate, 2010). For this, many studies have suggested that the subtitles for children's programs must be adapted to the characteristics of the children they are directed to, by simplifying them, reducing the speed, or omitting superfluous information (Bachmeier, 2014; Neves, 2009).

2. Materials and methods

The collection of data was performed through content analysis of the RTVE subtitles and an online survey (doi.org/10.6084/m9.figshare.14560716) completed by deaf people who were users of the subtitling service (Cea, 2012). In first place, the content analysis was divided into two parts: a quantitative analysis to examine the number of programs that were subtitled, their format, and the time of day they were broadcasted; and a qualitative analysis to describe the main characteristics of the RTVE subtitles. This combination of quantitative and qualitative analyses has been supported for many decades by authors such as Holsti (1969), Bardin (1986) or Krippendorff (1990) and allows us to provide a more complete description of the subtitles in the period studied. Also, given that this accessibility service has very high quotas, the analysis of qualitative aspects related with the quality of the service was highly interesting.

2.1. *Quantitative analysis*

In the quantitative analysis, to measure the adequacy of the aspects studied –quantity of programs with subtitles, types of programs subtitled, and time slot they were broadcasted, the minimum quotas established by the General Law of audiovisual communication (Law 7/2010) were utilized; that is, the mandatory quotas of sign language, subtitling and audio description for the public and private operators of state or autonomic television stations (Serrat & Fernández-Viader, 2013). More specifically, this guideline states that the public televisions must subtitle 90% of their programs.

In total, four complete weeks of programming were analyzed between 2017 and 2018, following the traditional division of the television year into four seasons (Blum & Lindheim, 1987; Eastman & Ferguson, 2009): 23rd–29th of October, 2017, 25th–31st of December, 2015, 23rd–29th of April, 2018, and 20th–26th of August, 2018. These weeks were probabilistically selected through simple randomized sampling, which strongly recommended for these types of studies (Martínez, Castellanos & Chacón, 2014). A total of 5,044 units were examined in the quantitative analysis, which corresponded to the total number of programs broadcasted during the four weeks selected, exceeding the sample needed for an analysis with a 99% confidence (Neuendorf, 2002). This work was conducted by a team of four coders, with the SPSS v24 software. To measure reliability, the Krippendorff Alpha coefficient was utilized on 10% of the total analyzed, and a value of 0.97 out of 1 was obtained (Krippendorff, 2004). Considering that a value of 0.8 is considered sufficient, the reliability of this study clearly exceeded the values required.

Lastly, to determine the time slot in which the subtitled programs were broadcasted, a traditional division of nine time slots was utilized (Contreras & Palacio, 2001), as shown in the results section. Likewise, to determine which types of programs contained subtitles, a list of program formats was created, which encompassed the diversity of content from RTVE and included all of those utilized in the quantitative and qualitative analyses (Table 1).

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2.2. *Qualitative analysis*

For the qualitative analysis, 72 programs were studied, distributed throughout the different RTVE channels, considering that they represented the diversity of television formats broadcasted: general and thematic news programs, interviews, talk shows, reports, informational and entertainment magazines, documentaries, cultural and educational programs, fiction, reality shows, quiz shows, humor, cooking shows and sports, also distinguishing between general and children programming. These programs were broadcasted during the same weeks analyzed in the quantitative analysis, and were selected so that at least one program from each format broadcasted was included, to evaluate the possible similarities and differences in the subtitles as influenced by the type of program dealt with.

To evaluate the qualitative aspects of the subtitles, the variables studied were taken from the current UNE 153010 (2012) guidelines from the Spanish Association of Normalization and Certification (AENOR) on subtitling for the deaf and persons with a hearing disability. More specifically, these were visual and temporal aspects (placement of subtitles on the screen and delay of the subtitles in live programs); character identification technique (tags, scripts, names, etc.); sound effects (format and placement); contextual information and voice overs; music and songs. In every case, the results obtained were compared with the guidelines defined by the legislation. Likewise, for the delay of the subtitles in live broadcasts, the process indicated in the AENOR legislation were followed (2012).

2.3. *Survey of deaf people*

The content analysis designed for the present study served as a descriptive method to analyze the reality of the RTVE subtitles, while the objective of the survey provided to deaf people was to evaluate the suitability of the service according to their own opinions. It was completed by 183 participants. In the survey, the participants were asked about the level of satisfaction with the quantitative and qualitative aspects of each service, and open-ended questions were included to collect the main criticisms and demands of the users. A Likert-type scale with five options was utilized to measure the general satisfaction with this service. The survey was conducted online through the SurveyMonkey platform from January to March 2018, coinciding with the period content analysis, so that both results referred to the RTVE subtitling in the same period of time, and were therefore associated.

The survey was reviewed from the academic point of view by the experts in survey methodologies Cea (2004), and Sánchez-Carrión, Segovia-Guisado and Sánchez-Meseguer (2012). The collaboration of diverse deaf individual associations was used for its dissemination. These associations distributed the survey voluntarily among their members and social networks. Among them, the State Confederation of Deaf People (Confederación Estatal de Personas Sordas (CNSE)), and the Spanish Confederation of Families of Deaf People (Confederación Española de Familias de Personas Sordas (FIAPAS)) are highlighted. This method of dissemination of the survey allowed it to directly reach the specific collective of deaf people who were users of the subtitles broadcasted in RTVE. Lastly, the mean percentage of surveys completed rose to 80%, indicating the strong interest by those surveyed, and re-enforcing the pertinence of this method.

3. Results

During the writing of the study results, as opposed to the methods section, we opted to include all the methods applied into a single section. This is because the survey method analyzes the same variables as the quantitative and qualitative analyses, but from the point of view of the users. Thus, by presenting all the results together, it is possible to more clearly discern the association between the results found in the content analysis, and the evaluation of the variables by the deaf people who were surveyed.

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In total, during the period analyzed, RTVE subtitled 95.5% of their television programs, while the other 4.5% was broadcasted without any type of accessibility. To obtain this figure, we considered the duration of the programs subtitled in relation to the total number of hours broadcasted.

More specifically, Channel 1 (La 1) subtitled 93.3% of their programs. Channel 2 (La 2), 95.2%; Clan subtitled 100% of its content; 24 Horas, 93.7%, and Teledeporte 94.8%. As observed, great differences between the channels were not detected, and in all the cases, the results exceeded the 90% demanded by the General Law of audiovisual communication (Law 7/2010). Figure 1 shows the percentage of subtitling for each of the RTVE channels during each week of analysis: the only which decreased below the mandatory 90% was Teledeporte during Christmas week, although other channels such as Channel 1 and 24 Horas also reduced their programs with subtitles on the same week, given the increase of news programs without this accessibility service.

Figure 1: RTVE subtitling according to cannel and week analyzed.
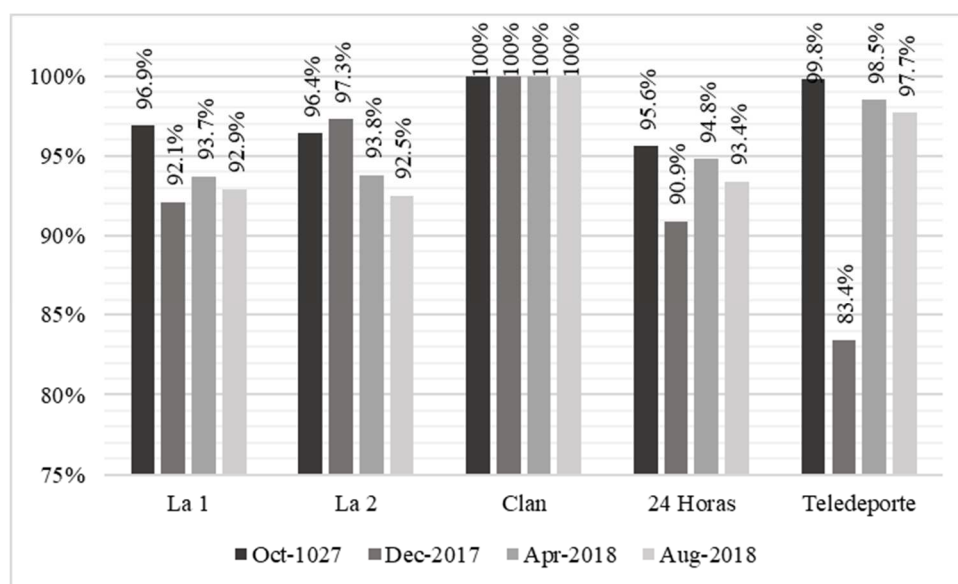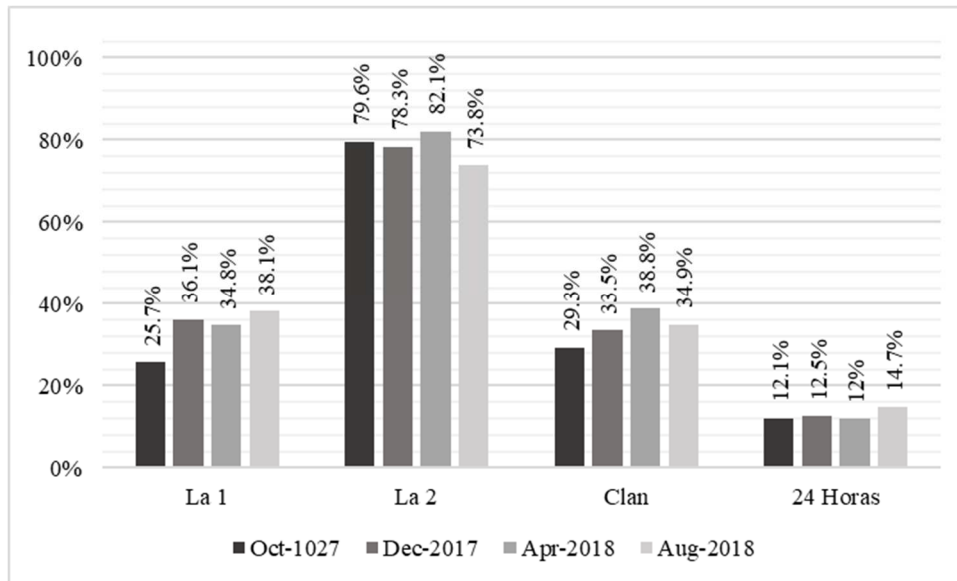

Source: Own elaboration.

One of the most often repeated petitions found among the survey answers was the increase in online content with subtitles, for both simultaneous (live) broadcast and on-demand programs. More specifically, 95.38% of those surveyed indicated that they would like to watch RTVE content with subtitles in the live online broadcasts, and 60.47% mentioned subtitling of on-demand programs.

However, in the analysis, it was determined that the live broadcasts through the RTVE website lacked subtitles, and for the on-demand program, these were reduced to 31.8%. Although some of the programs cannot be watched on-demand, mainly movies and news programs from the 24 Horas channel, the calculations were made on 100% of the contents broadcasted during the period of analysis to be able to compare the data from traditional television and on-demand programs. However, if we only considered the content from the period analyzed that was available on-demand, the subtitling increased to 47.2%.

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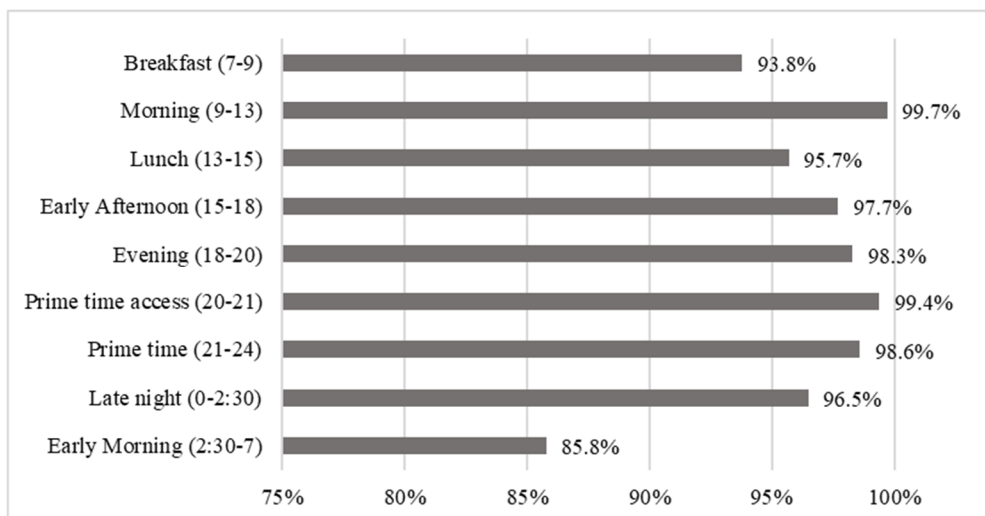**Figure 2**: RTVE subtitling of on-demand programs per channel and week.

Source: Own elaboration.

Delving into the results of subtitling in the on-demand programs, aside from the drastic reduction in the subtitles with respect to linear television, significant differences were found according to channel. More specifically, the contents exclusive to the 24 Horas channel did not have subtitles on their on-demand programs, but this channel broadcasts some contents on Channel 1 and Channel 2 –the News, Channel 2 News, or the En lengua de signos (Sign language) program, for example, and these programs do include subtitles (Figure 2). Teledeporte, on the contrary, completely lacks this service, as it does not have any subtitled on-demand programs, and does not re-broadcast any programs from other channels.

As for the distribution of the subtitles according to time slot –a variable measured in traditional television– all the intervals had more than 90% of the programs subtitled, except for the early morning ones (figure 3). This is especially due to the Noticias 24 Horas news program, which is broadcasted on this time slot without this service.

Figure 3: RTVE subtitling according to time slot.

Source: Own elaboration.

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Lastly, Table 1 shows the percentage of subtitled programs for each format or type of program in linear television. To measure the accessibility according to format, 100% of the programs broadcasted were considered. All the formats were at least 90% subtitled, except for the news programs (88.9%) and the education programs (59.7%). This is due, as already mentioned, to the news programs broadcasted in the early morning, especially during the weekend, and also the education programs in English that are broadcasted in Channel 2 without subtitles.

Table 1: RTVE subtitling according to television program format.

Format	Subtitling	Format	Subtitling
News program	88.9%	Magazine	100%
Thematic news program	98.3%	Quiz show	91.2%
Interview	94.5%	Comedy program	100%
Debate/Talk show	99.8%	Sport broadcast	94.8%
Report	95%	Cooking show	100%
Informational magazine	100%	Galas/Specials	98.1%
Documentary	98.5%	Other entertainment	100%
Cultural program	97.6%	Children – Animation series	100%
Educational program	59.7%	Children – Series	100%
Movie	99.2%	Children – Animation movie	100%
Series	100%	Children – Movie	100%
Docushow	94.5%	Children/youth program	100%
Talent show	100%	Others	94.6%
Talk show	100%		

Source: Own elaboration.

In the survey, the three quantitative variables studied obtained a very similar degree of satisfaction. All of them were found at around 3, which was the intermediate option ("not satisfied/not dissatisfied," in the 5-option Likert scale numbered from 1 to 5). Specifically, the satisfaction with the quantity of programs with subtitles obtained a mean score of 3.07; the satisfaction with the variety, 2.96; and satisfaction with the time slot, 3.13.

Aside from the quantitative aspects, other qualitative aspects of the subtitles were considered for the content analysis, as well as the survey. In first place, RTVE offers two types of subtitles: the digital ones, letters in color with a black border, and without a background; and those of the teletext, composed of letters in color in a black box. From these options, the ones preferred by the users were the digital subtitles (45.11%), as opposed to the teletext (28.57%).

In general, the subtitles were placed on the lower part of the screen, but in some live programs such as Conexion TDP (Teledeporte), The Hora Cultural (24 Horas), España Directo (Channel 1), or Channel 2 news (Channel 2), these were placed higher. Thus, the collision of the subtitles with the text on the screen was avoided –they were placed just above them–, and with other information on the screen, without the need to move the subtitles in live broadcasts. The main differences with respect to the position of the subtitles were found in sport re-broadcasts. In this study, two sport re-broadcasts were analyzed, one from Teledeporte and another from Channel 1, both from linear television. In the Eurocup basketball game (retransmission in Teledeporte), and in the Tour of Spain (live on Channel 1), the subtitles were always centered on the upper part of the screen. However, in the WTA tennis match (live in Teledeporte), these were placed on the lower right part of the screen.

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Therefore, it can be deduced that this is not associated to the channel or live broadcast, but to the type of sport, and the distribution of the elements that appeared on the screen.

To differentiate the characters, the UNE 153010 guidelines (AENOR, 2012) mention the use of the colors white, yellow, cyan, green, and magenta, which are used by RTVE, according to the analysis performed. The subtitles were always shown in white in some live programs, such as La Noche in the 24 Horas channel, or the News program. In the cases in which color was used, the protagonist, narrator, or main presenter, was always shown in yellow. If there were two presenters or main protagonists, one of them was shown in yellow, while the other in green. However, on the interviews, the presenter was always shown in yellow, while the interviewee was shown in white.

Aside from the colors, RTVE uses other techniques to identify different characters, which are also found in the guidelines. Scripts were utilized when two or more characters with a white color spoke one after the other, to distinguish when one started to speak, and name tags were used in debate or talk show programs. Likewise, a tag in parentheses and in upper case was used in front of the text when the person speaking was not on the screen, or if it was a voice over, and also when two or more people were speaking at the same time. These strategies are standardized in different types of programs, and in the different RTVE channels, which facilitates the understanding of the subtitles and the following of the argument.
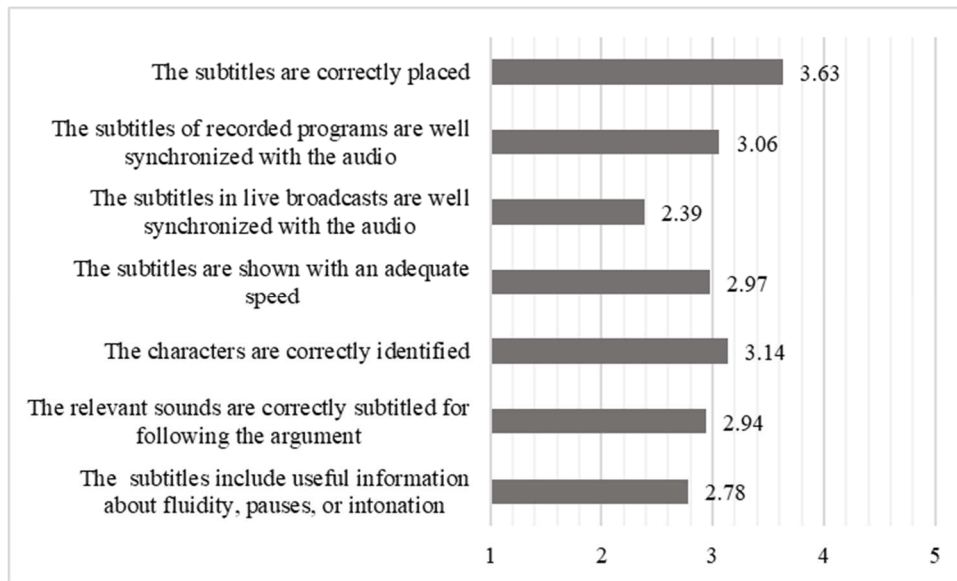
If there were common criteria for the identification of characters, clear differences were observed for sound effects in RTVE. In first place, the UNE 153010 guidelines (AENOR, 2012) indicate that sound effects must appear on the upper right corner, in parenthesis and with the first letter in uppercase, except for live programs. In this way, in RTVE we found programs that subtitled the sound effects following these criteria, and with white text, mainly in Channel 1. However, other programs followed these guidelines as well, but the text was purple, especially in Channel 2 and Clan. In other contents, the subtitles were not in parenthesis –Ben and Holly's little kingdom, or the Penguins of Madagascar (Clan), for example–, or the parenthesis only appeared at random times –Teletubbies and Four and a Half Friends (Clan). The subtitles can also appear centered on top of the screen (Cook with Clan or Antboy, in Clan), centered on the bottom –live programs– or completely in upper case –En portada (24 Horas) and Trucktown (Clan). Lastly, some programs do not utilize sound effects, as we found in Eurocup (Teledeporte), Españoles en el mundo (Channel 1), En lengua de signos (Channel 2), Octonauts (Clan) or La hora cultural (24 Horas).

In fact, a common factor was found in most of the song lyric subtitles, the purple color text centered on the bottom of the screen. Only in Masterchef Celebrity (Channel 1) and in some children series –Timmy time, Messy goes to Okido, Trucktown (Clan), did we find a different way to subtitle when someone sang, which was the insertion of a number sign (#) at the start and at the end of the text that was sung. And it is precisely this last format, occasional in RTVE, the one found in the UNE 153010 guidelines (AENOR, 2012).

The analysis showed that the contextual or suprasegmental information (emphasis, irony, whispers, sarcasm, etc.), was subtitled as described in the Spanish guidelines: with a tag in parentheses, in upper case, and in front of the text it referred to, if needed.

With respect to the survey conducted with deaf individuals who were users of the subtitle service, they were asked about these qualitative aspects of the subtitles, and clear differences were observed in the degree of agreement. Thus, as observed in figure 4, the position of the subtitles obtained the highest score (3.63 over 5), while the synchronization of the subtitles in live broadcasts obtained the lowest score (2.39 over 5).

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Figure 4: Mean agreement with the affirmations on qualitative aspects of the subtitles.

Source: Own elaboration.

The aspect that was the worst scored was the delay in the subtitling in live broadcasts. This was the matter that most worried the individuals surveyed, and the most-often repeated when they listed aspects that could be improved. According to the UNE 153010 guidelines (AENOR, 2012), the live broadcasts should not have more than 8 seconds of delay. Having this in mind, the subtitling delay was measured in the live broadcast of the News from Channel 1 on August 22nd, 2018 in linear television, following the method found in the guideline itself, and the result was 3.37 seconds, much lower than the maximum value of 8. However, this could be because a great part of the content was pre-recorded, or texts that were read by the presenters, which were already available when subtitling the program, so that it was not a completely "live" broadcast. During these periods, the delay was found to be between 0 and 3 seconds, while during the live connections, this ascended to 8 seconds, even reaching 13 seconds. It is necessary to specify that RTVE utilizes respeaking to place subtitles in live broadcasts, utilizing the Dragon software. At the end of the survey, the participants were asked for a general assessment of the subtitling service from RTVE, providing a mean score of 6.51 out of 10.

4. Discussion and conclusions

In first place, as previously mentioned, the minimum quotas demanded by the General Law of audiovisual communication (Law 1/2010) were used as the reference values to determine if RTVE complied or not with the guidelines. However, we must pause and specify that these guidelines have some shortcomings. For example, it only establishes a minimum subtitling of 90% for public channels (75% for private ones), but does not distinguish between different television genres or formats and it does not establish the time slots in which the subtitles must be utilized, with these matters decided by the channels themselves. It does not make mandatory subtitling for advertising, and although in RTVE there is not advertising as such, there are cultural promotions and sponsorships that are not accessible to deaf individuals, as they are not subtitled.

On the other hand, this law only forces subtitling for channels found in Digital Terrestrial Television (TDT), but not pay-per-view channels or on-demand video platforms. Considering how audiovisual consumption is changing, with a clear rise in on-demand content, especially

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among children and youth (Ortega-Mohedano & Pinto-Hernández, 2021), it is necessary to adapt the guidelines so that the mandatory nature of subtitling to make the content accessible, also encompass the new on-demand and online audiovisual content. In fact, this is one of the demands from deaf person organizations, which has been ratified by the survey results (Bolaños-García-Escribano, Díaz-Cintas & Massidda, 2021; Gou & Dezuanni, 2018). The new Directive 1808 from the European Parliament and the Council (European Union, 2018) has already incorporated this matter, and in principle, will force the updating of the Spanish guidelines, which would increase the quotas of subtitling of online audiovisual content. The preliminary project of the new audiovisual law, which has not yet been ratified, includes these matters, and others as well, to guarantee of the quality of subtitling and auto-description services.

We must start with the premise that subtitling for deaf people is an accessibility service that is necessary as a fundamental part of cultural pluralism in communication media and as a manner to promote social inclusion, which is an essential value in democratic societies (Rodrigo & Tabuenca, 2020). In the case of RTVE, the subtitles reached very high quotas, exceeding the 90% required by the audiovisual law (Law 7/2010) for the TDT (Gómez-Maciá, 2015). In fact, 2017 and 2018 were they first years in which the corporation met the 90% subtitling quotas in all their channels (National Commission of Markets and Competition, 2020), levels which have even increased in later years (RTVE, 2020). However, the live online broadcasts of RTVE do not have subtitles, and the percentage is drastically reduced for on-demand contents (National Commission of Markets and Competition, 2020). The margin of improvement is evident in online formats, and it has become a matter that is highly demanded by the deaf individuals surveyed. Given the fast growth in the consumption of on-demand content, these individuals consider that it is indispensable for accessibility to expand subtitling to these contents.

The subtitling of live broadcasts is, without a doubt, the most controversial issue, as shown by the score obtained and the recent bibliography (Romero-Fresco, 2020; Souto-Rico *et al.*, 2020). There is no unanimity on the best technique to apply, if stenotyping or respeaking. The latter has been the most utilized in recent years (Eugeni, 2009; Romero & Martínez, 2015); however, stenotyping is a good alternative to reduce the delay in subtitling (Martín-Edo, 2017). On the one hand, stenotyping allows for a very high precision and minimal delay, lower than respeaking. The disadvantage, or the difficulty of this system, is that it needs personnel who are specifically trained for this, and who are very scarce. This aspect is especially important, considering that the news programs are most affected by the delay in direct subtitling. The cultural pluralism of the media is associated with the defense of the right of freedom of expression, which includes equality in the access to information without any type of discrimination. For this, without a doubt, it is necessary for the subtitles of the live broadcast news contents to be effective. Another option would be to slightly delay the channel's news broadcast, so that it matches the subtitles, leaving the main channel fully live. Along this line, RTVE is taking part in innovation projects with automated subtitling, utilizing cloud technologies. Likewise, in 2020, it initiated automated subtitling of territorial news programs from Channel 1, contents which up to this point did not have this accessibility service. In that same year, RTVE participated in the European project Europeana Subtitled (EURSUB), whose objective was the automated generation and translation of subtitles from the archives of the Corporation to the different official European languages (RTVE, 2020).

As for the subtitling of specific elements, such as song lyrics, it is logical to think that it would be more beneficial to adapt these subtitles to the directives of the standards, as it is applicable to all the audiovisual contents in Spain. A positive practice was also observed in the adaptation of the subtitle to formats such as sports re-broadcasts, where the position was associated with the type of sport and the distribution of the elements that appeared on the screen. This seems to be a good strategy, as it allows users to view the subtitles as well as the

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sporting event and other information on the screen. These criteria must be unified to facilitate the reading of and following the event by deaf individuals. As for the latter, it facilitates their reception, given that the user knows beforehand how the sound effects, or suprasegmental elements, among others, will appear.

Another of the often-repeated demands in the survey was that the subtitles be customizable. Many responses asked that issues such as the size of the font, the color, or the speed be able to be adapted to the needs of those who watch the contents with subtitles. The more plausible options along this line would be to introduce various standardized possibilities in the television menus –an issue that would also concern the television makers–, to take advantage of the HbbTV options found in smart TVs. This system is already being utilized by RTVE to include sign language in connected television (RTVE, 2020).

On the other hand, many people surveyed asked for subtitles that were useful for people with visual impairments. For this, it would be necessary to include audio subtitles, which could be defined as dubbing of the subtitles, and would be especially useful in programs in original version with subtitles. This service of accessibility has already been included in Directive 1808 of the European Union and Council (European Union, 2018), and therefore, should be introduced in the Spanish audiovisual law –as it is not found in the current preliminary law–, and applied to the Spanish television networks.

In the survey, the users reminded us that this service must be obligatorily implemented in all the programs to respond to the needs of every audience, and to comply with the "vocation of public service" of television. Effectively, this coincides with what was found in the numerous bibliographies which in the past few decades have argued for the public service function of television, associating it with matters of universal access and attention to diversity and minorities (Barnett, 2007; Blumler, 1993; Bustamante, 2008; Utray & Gil-Sabroso, 2014). In summary, having in mind what was presented in previous works and the results of this analysis, accessibility is fundamental for discussing the compliance of the requirements of cultural pluralism and to promote a society that is truly inclusive. Thus, we can conclude by affirming that the concept of cultural pluralism in communication media, which encompasses accessibility to the contents, includes subtitling as an indispensable manner of social inclusion for the deaf.

In the case of RTVE, the study confirmed that it exceeded the minimum of 90% demanded, and even reached the 30% established in the draft of the new audiovisual law that is still in its initial stages, for on-demand content, although not in every channel. The general assessment obtained from the survey –6.51 out of 10– indicated that the individuals surveyed gave a passing grade to this service, but also indicated the possibilities for improvement (Gil-Sabroso & Utray, 2016). Having obtained high quotas in linear broadcasts, the demands are now focused on new online formats and on matters of quality.

In this way, the article re-enforces the findings from previous studies, such as the association of audiovisual accessibility and social inclusion, the importance of the subtitle characteristics for deaf people, or the need to broaden accessibility to online content. Also, it introduces matters such as the suitability of the RTVE subtitles not only to the current audiovisual law of 2010, but also the current draft law. Likewise, it adds questions such as the expansion of the personalization options found in the accessibility services in hybrid television, and it also provides the needs for improvement of the subtitles as described by the viewpoints of the users.

It is necessary to continue working on this subject, to arrive at a truly full accessibility of deaf people, in this case, to the television contents. Likewise, it is also indispensable to design future research studies, having in mind deaf people, so that they may help in the improvement of subtitles with their contributions, as well as its increase in the number and variety of contents. Other qualitative methods such as focus groups, or in-depth interviews with users and representatives of the deaf community are planned as future research studies.

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