The International Journal for Translation & Interpreting Research
trans-int.org

"Your subtitles will look like this": Exploring user preferences for closed captions across streaming platforms

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DOI: 10.12807/ti.117202.2025.a04

Abstract: In recent years, the rise of streaming platforms and Over-The-Top (OTT) services has redefined the landscape of audiovisual content consumption, introducing a wealth of entertainment options that encompasses not only dubbed and subtitled versions but also captioned and audio-described materials. A key trend among most Video on Demand (VoD) and OTT platforms is the availability of customisable subtitle options, as noted by Bucaria (2021). These features enable users to tailor their viewing experience according to individual preferences, reflecting the growing emphasis on personalisation as a crucial aspect of user interaction (Sanchez, 2015). This adaptability allows viewers to modify parameters such as font, size, colour, and background, contributing to a more comfortable and engaging viewing experience. However, the linguistic and paralinguistic attributes of subtitles typically follow the specific guidelines set by each platform. Drawing on validated reception studies in this field, this article examines the complex relationship between stylistic choices in closed captions (CC) among the Italian d/Deaf and Hard of Hearing (DHH) community. To do so, a comprehensive questionnaire was designed to gauge the nuanced preferences and levels of satisfaction among DHH users, exploring whether particular CC styles are preferred and to what extent the varied landscape of OTT platforms influences content engagement. The responses, collected from 139 individuals within the Italian DHH community, provide a robust dataset for both quantitative and qualitative analysis. This data serves as a foundation for evaluating user needs and shaping recommendations for the optimal design and presentation of subtitles.

Keywords: captions, Deaf and Hard of Hearing, Italy, OTT platforms, appearance, preference.

1. Introduction

The rapid evolution of audiovisual content consumption has seen OTT platforms emerge as dominant players, offering a vast array of entertainment to global audiences. From the comfort of their homes, viewers can access a wide variety of content, spanning classic films, the latest series, documentaries, TV shows, and Video on Demand (VoD) services. This proliferation of streaming services has democratised access to entertainment, fostering new viewing experiences that are commonly shared worldwide. At the same time, it has opened new avenues for content customisation and personalisation, from selecting specific content to choosing preferred localisation and accessibility options. Viewers now have unprecedented control over what, when, where, and how they watch audiovisual content, no longer bound by traditional television programming and schedules. Furthermore, content is offered with a multitude

of localisation and accessibility choices, allowing viewers to select dialogue languages, subtitle languages, and even combinations of audio description and captions that were previously unavailable.

OTT platforms are digital service providers that distribute streamed media content directly to consumers via the internet, bypassing traditional broadcast systems such as terrestrial, satellite, or cable TV networks. These platforms operate under various business models, including ad-based video on demand, subscription-based video on demand (SVoD), transactional video on demand, and hybrid models. Leading OTT services include Netflix, Hulu, Disney+, and Amazon Prime Video (Violini, 2023; Nickinson, 2024). Benefits include convenient access, diverse content options, personalised viewing recommendations, flexible viewing, multi-device support, and subscription perks. As a result, OTT platforms are reshaping television viewing habits and are seen as the new standard for entertainment, driving shifts in content consumption patterns (Pekpazar *et al.*, 2023; Soren & Chakraborty, 2024). One significant feature of OTT platforms, and the focus of this study, is the provision of customisable subtitle options. As highlighted by Bucaria (2021), this feature allows viewers to tailor their viewing experience according to their individual preferences as well as their needs. Whether adjusting font size for readability or selecting a preferred colour scheme for enhanced visual contrast, viewers now have greater control over how they consume audiovisual content. This customisation mirrors the broader trend of personalisation in digital media, where user interaction and engagement are increasingly prioritised (Germanakos & Belk, 2016). However, while customisable subtitles offer enhanced flexibility, their linguistic and paralinguistic attributes are often constrained by platform-specific guidelines and standards. For instance, when a man is speaking off-screen, the speaker tag of closed captions might be represented as: [man] / [Man] / [MAN] / (man) / (Man) / (MAN) / man: / Man: / MAN: / -MAN: and the choice of a specific tag format is not influenced by customer preferences but is instead determined by the guidelines established by OTT platforms (Uzzo, 2024). This variability raises questions about the extent to which viewers can truly customise their viewing experience, particularly viewers belonging to the d/Deaf and Hard of Hearing (DHH) community, who are regular consumers of subtitles.

As technology advances and new consumption patterns emerge—accelerated by events like the COVID-19 pandemic, which saw a marked increase in audiovisual content consumption due to extended periods spent at home—the production of audiovisual content has surged to meet this demand. This increase includes a corresponding rise in content localisation, which entails providing dubbing and subtitles for various regions. Similarly, access services, such as audio description and captions, have become more prevalent. In this article, the terms “closed captions”, “captions”, “captioning”, or the acronym “CC” refer to any form of subtitling addressed to a hearing-impaired audience available on OTT platform or VoD streaming services.

2. Theoretical framework

Over the years, industry and academia have investigated key stylistic features related to subtitles, ultimately giving users the ability to choose from a variety of combinations, including font size, colour, background, and more. Even font type, which is intrinsically pivotal in presenting subtitles clearly, has been examined through a series of experiments using eye-tracking technology (Gouleti *et al.*, 2021), in diverse contexts, such as 360° environments (Brown

et al., 2018; Brescia-Zapata *et al.*, 2022), and in videogames (Mangiron, 2013), as well as in relation to specific audiences, including children (Zarate & Eliahoo, 2014). Given that there is not one single DHH community in the world, but rather different communities across countries, scholars in various nations have sought the preferences of their respective DHH populations regarding captions. This is a crucial aspect of the idea behind this study, as much of the existing studies have been conducted in countries such as, the United Kingdom (UK), the United States (US), Spain, France, Greece, and other European countries including Slovakia, Lithuania, and Portugal. To the author's knowledge, there has been limited research focusing on the preferences and needs of the Italian DHH community in relation to caption customisation, apart from notable contributions by other scholars (see Morettini, 2012; Eugeni, 2015). This study aims to expand on this by directly consulting the Italian DHH community through a questionnaire administered in Italian.

When subscribing to OTT platforms, such as Netflix, Disney+, Amazon Prime Video, and others, new users are typically prompted to select films and shows they have watched and enjoyed in the past. This process feeds information into the system, enabling algorithms to recommend similar content in the future (Netflix, online; Neyah & Vijayakumar, 2023). At the same time, as a default setting, users are provided with a standard set of caption options, should they wish to enable them while consuming audiovisual content. For some users, captions are an essential and integral part of the viewing experience, and this segment of the population can be identified as the DHH community. However, it is well-established that subtitles and captions are also essential, beneficial, and enjoyable for other groups, including elderly people, language learners (Ofcom, 2017; Vanderplank, 2016), and those in environments where sound is unavailable, such as in waiting rooms, public spaces, or rooms shared with others (Szarkowska, 2020).

The standard set of captions available as a default option across the main OTT platforms is similar, typically featuring white text in medium size, often against a black background, as seen on Disney+ (see Figure 1) and Amazon Prime Video (see Figure 2), or without a background, as in the case of Netflix (see Figure 3).

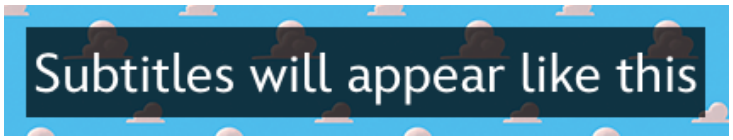

Figure 1: Disney+ Default Subtitles Appearance

Figure 2: Amazon Prime Video Default Subtitles Appearance

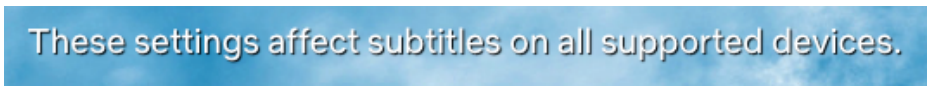

Figure 3: Netflix Default Subtitles Appearance

These settings are utilised as they represent the most standard and commonly used form of captions across OTT platforms. Whether for

interlingual subtitles or captions designed for hearing-impaired audiences, users can adjust the font type, size, and colour to suit their individual needs or preferences. Viewers have the option to customise subtitles by selecting the font, adjusting the text size, and choosing their preferred foreground and/or background colour (if any). To illustrate this, the same subtitle might appear as shown in Figure 4 (Arial, 100%, white on black) or in Figure 5 (Comic Sans, 400%, red on magenta), depending on the level of customisation. The following two figures are screenshots from the BFI Player (BFI Player, n.d.) and serve as examples of extreme customisation of captions on OTT platforms. While such extensive customisation capabilities demonstrate the technological flexibility of OTT platforms, they also raise questions regarding the purpose and practicality of these adjustments. Excessive customisation, as exemplified by Figure 5, often results in captions that deviate significantly from conventional standards, with overly stylised fonts, extreme text sizes, or bold and unconventional colour combinations. These variations may alter the visual experience to the point of distraction, challenging the intended purpose of captions to enhance accessibility and comprehension. Such configurations raise intriguing considerations about the role and limits of personalisation in ensuring that captions remain functional and effective, especially for users who depend on them to navigate audiovisual content.

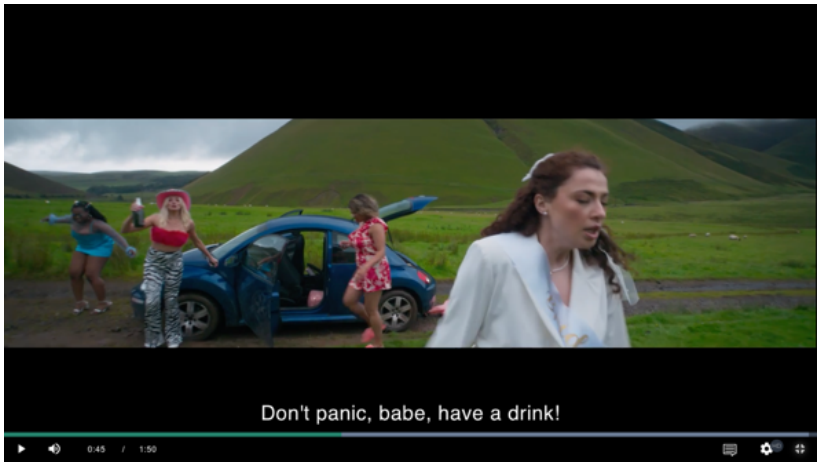

Figure 4: Arial, 100%, White on Black

Figure 5: Comic sans, 400%, Red on Magenta

Furthermore, unlike standard subtitling, in Subtitles for the Deaf and Hard of Hearing (SDH)—subtitles for the Deaf and Hard of Hearing commonly used by TV broadcasters and transmitted via the teletext systems—the use of different colours applied to foreground and/or background of selected subtitles serves a distinct purpose: speaker identification. This technique helps hearing-impaired viewers discern who is speaking when it may not be immediately apparent. It is more commonly used in SDH delivered via teletext systems on television, which support a fixed number of colours that are displayed correctly on TV screens. The associations between colours and characters, or between colours and sound effects, vary across countries and broadcasters. Beyond major OTT platforms frequently discussed in research and conferences, I have examined elsewhere (Uzzo, 2024) an important VoD platform in the UK, the BFI Player, which streams acclaimed, landmark, and archive films available for rent, by subscription, or for free (BFI Player, n.d.). The BFI Player offers users the ability to customise the appearance of the closed captions, allowing them to select options such as text colour, background colour, window (or box) colour, as well as font size, text edge style, and font type, as shown in Figure 6.

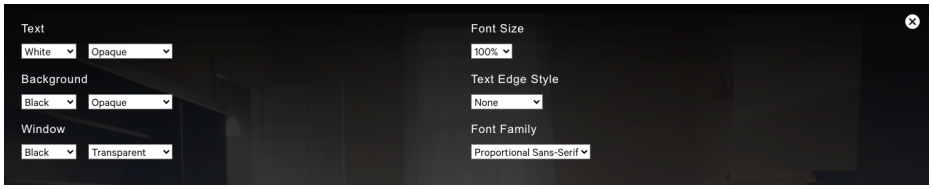

Figure 6: Captions Settings on BFI Player

This level of customisation in caption settings, which is somewhat more extensive and flexible than that offered by most VoD and OTT platforms, allows users to adjust captions to meet their individual needs. For instance, they can opt for white or yellow text, slightly increase the font size, or add a background box behind the text. On the other hand, the perhaps excessive degree of customisation provides users unfamiliar with caption standards the option to select combinations of text, background, size, and font that may be unsuitable for films—or worse, entirely unreadable. Below, Figures 7, 8, and 9 illustrate three versions of the same subtitle, showing variations between 'standard' and 'custom' types of captions. Figure 7 presents a standard caption, featuring white opaque text, a black opaque background, and a black opaque window, with 100% font size, no text edge, and a proportional sans-serif font. It is important, at this juncture, to distinguish between a background and a window: a background refers to the box surrounding the text, which adjusts its shape dynamically with each change in word or sentence length (as often occurs with subtitles). In contrast, a window is a fixed strip that covers a broader portion of the screen, typically spanning from side to side, or accommodating the maximum number of characters in one or two lines of subtitles. Figure 8 depicts a custom caption, where yellow opaque text is displayed against a black semi-transparent background and a black transparent window, with a 125% font size, no text edge, and a monospace sans-serif font. Finally, Figure 9 illustrates a custom caption dominated by blue opaque text on a cyan opaque background, enclosed within a red semi-transparent window, with the font size set to 400%, drop shadow text edge, and a script font.

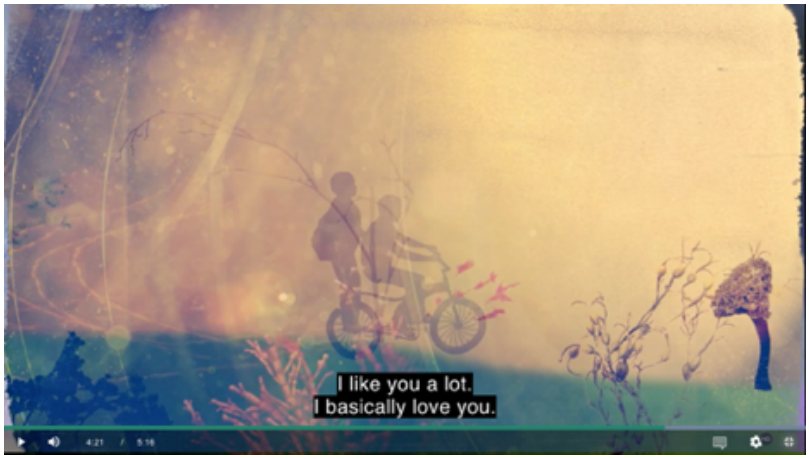

Figure 7: Standard Caption

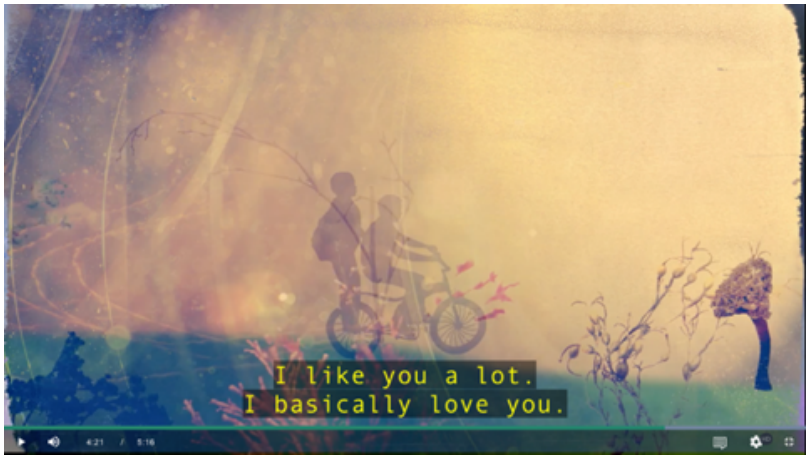

Figure 8: Custom Caption

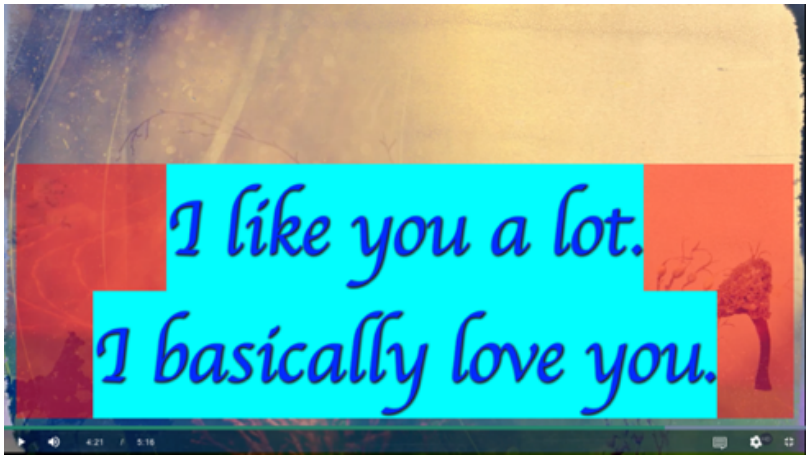

Figure 9: Custom Caption

As shown in the examples above, reasonable adjustments to the captions settings allow users to customise captions according to their vision-related (dis)abilities and preferences. However, excessive customisation can hinder readability, with captions occupying most of the screen, using non-standard fonts, and ignoring appropriate colour combinations—elements that are crucial

for subtitle and caption design and have been the subject of extensive research. It could be argued that instead of offering users an overwhelming number of stylistic choices—some of which may not align with the established norms or practical considerations—an alternative approach could involve providing captions based on different linguistic aspects. For instance, options could include verbatim, standard, or edited text, easy-to-read language, or explanatory subtitles, all of which might cater better to diverse audiences. This approach could prioritise functional accessibility over aesthetic customisation, ensuring that captions are better tailored to the varied needs and preferences of diverse user groups. For instance, verbatim captions may appeal to those who value precise transcriptions of dialogue, while simplified or easy-to-read text could better support individuals with cognitive disabilities or lower literacy levels. By shifting the focus from stylistic flexibility to linguistic and functional adaptability, OTT platforms could address a broader spectrum of accessibility needs and enhance the viewing experience for a wider audience. However, while this approach has the potential to meet the unique requirements of diverse users, implementing such tailored solutions would demand significant investment in resources, time, and expertise. Platforms would need to create and maintain multiple caption formats, engage specialised professionals for customised designs, and conduct extensive user research to align with specific accessibility standards, presenting considerable logistical and financial challenges.

Given this context and the accompanying visual examples, this study aims to investigate the customisation of captions and the preferences of the Italian DHH community, focusing on various stylistic aspects in relation to the end-users' specific needs and preferences. A key objective is to identify whether certain caption settings are consistently preferred within the community. Additionally, the study examines the community's awareness of the available settings and their ability to customise captions to meet individual requirements. To achieve this, I will analyse commonly used caption settings, drawing comparisons from the options typically available on platforms such as Netflix. Through this analysis, the study aims to shed light on the nuanced dynamics of the use of captions within the Italian DHH community, offering insights into their preferences and experiences. To understand the nuances of caption preferences and their impact on content consumption, this study draws upon reception studies, a theoretical framework that explores how audiences interpret and engage with media content. Rooted in cultural and communication theories, reception studies emphasise the active role of viewers in shaping the meaning and reception of media texts (Di Giovanni & Gambier, 2008). By applying this framework to the context of captions within the Italian DHH community, it is possible to uncover the factors influencing how captions are received and how they shape consumption patterns.

3. Questionnaire and results

Central to this study is the development of a comprehensive questionnaire designed to capture the nuanced preferences and experiences of DHH individuals in relation to captions. The questionnaire covers a range of topics, including readability, style, and overall satisfaction with captions. By collecting data directly from DHH individuals, the aim is to reveal the factors that shape their perception, value, and engagement with audiovisual content. Through both qualitative and quantitative analysis of the responses, the research aims to

identify patterns and trends in captions preferences among the Italian DHH community.

The questionnaire, written in Italian and submitted to the Italian DHH community, was shared and reposted on social media via various groups of d/Deaf people and by word of mouth. The overwhelming number of responses and the speed with which the questionnaire was completed reflects the Italian DHH community's willingness to contribute to surveys aimed at improving accessibility services, such as captions on OTT platforms. The visual examples of captions settings were screenshots from Netflix's settings page. The first two questions gathered demographic information such as age and gender, while two more questions addressed deafness status and the level of hearing loss. This implicitly answered another question regarding self-identification and terminology: "How do you identify?" A fifth question gathered information about respondents' use of (written) Italian and LIS (*Lingua dei Segni Italiana* - Italian Sign Language) as a form of communication in everyday life. The sixth question asked which VoD and OTT platforms respondents subscribed to. In addition to subscription-based services, various online streaming platforms were included to gain insight into the full range of platforms used by respondents.

The core of this study, focussing on preferences and needs related to the appearance of subtitles, was addressed in six additional questions. These included whether respondents were aware of the ability to customise captions, whether their captions' appearance differed from the default settings, and questions about font size, colour, and type font preferences. The final question provided an open comment section for respondents to elaborate on their answers or leave feedback.

After the questionnaire was completed, the data was thoroughly analysed to discern trends in closed caption preferences among the Italian DHH community. The data was manually analysed (*i.e.*, without the use of data sorting or analysis software), starting with quantitative analysis to better understand the relationships between responses and the emerging patterns. This was followed by qualitative analysis to explore the open-ended responses and identify recurring themes and insights.

The questionnaire was distributed through various social media groups, resulting in 144 responses. Of these, one response was deleted due to random answers (as indicated by the respondent), three were excluded—though acknowledged—as they were submitted by hearing individuals, and one was removed due to incomplete answers, in line with McBurney and White's (2013) guidelines on managing missing data. Since data loss (attrition) is common in experimental studies and typically ranges between 20% and 30% (Orero *et al.*, 2018), the low 4% attrition rate is noteworthy, likely attributable to the brevity of the questionnaire and the absence of video clips, which allowed respondents to focus on completing the survey.

Therefore, a total of 139 responses were further examined. Although some respondents did not answer to all questions fully as they were not mandatory, their input was still noted, and their responses were counted as part of the final dataset of 139 respondents, representing 100% of the dataset.

The first question gathered the respondents' age range, and the results are well-distributed across the DHH population with:

- 10 respondents aged between 18 and 25
- 26 respondents between the age of 26 and 35
- 24 respondents between the age of 36 and 45
- 48 respondents between the age of 46 and 60

- 31 respondents aged over 60

This is a good indication that captions are a concern for all age groups within the DHH community. The second question, although not directly related to the objective of this study, gathered information about respondents' gender. The majority of respondents identified as female (73), followed by male (63), with a smaller proportion identifying as non-binary or preferring not to disclose their gender (3).

The third and fourth questions focused on the degree of deafness among respondents, enabling self-identification and self-determination in terms of terminology, but most importantly allowing them to be categorised as either deaf or hard of hearing, and thereby qualifying them to participate in the survey (or not). The responses showed that 95 respondents identified as deaf (a person with a profound degree of hearing loss), while 44 respondents identified as hard of hearing (a person with a severe, moderate, or mild degree of hearing loss) (World Health Organization, 2024).

The fifth question asked the respondents to share their preferred method of (daily) communication choosing between:

- Those whose mother tongue is LIS (Italian Sign Language)
- Those who are bilingual, using LIS and Italian
- Those who know LIS but prefer to communicate in Italian
- Those who do not know LIS very well and prefer to communicate in Italian
- Those who do not know LIS at all

The majority, approximately 72%, reported that they either use LIS as their mother tongue or are bilingual in LIS and Italian. The remaining 28% either prefer to communicate in Italian or do so because they lack proficiency in LIS.

The sixth question asked which online streaming platforms respondents subscribed to. This question included the most commonly used VoD and OTT platforms globally, as well as Italian platforms RaiPlay and Mediaset Play, which are run by Italy's two main TV broadcasters, RAI and Mediaset. The results are shown in Figure 10:

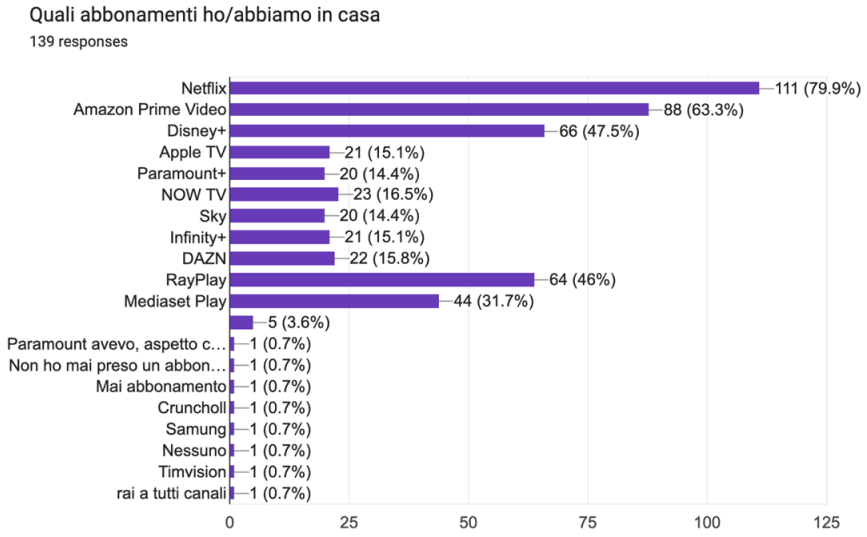

Figure 10: Responses to the Question "Which one have you subscribed to?"

The results indicate that a staggering 79.9% subscribed to Netflix, followed by 63.3% who subscribed to Amazon Prime Video, while Disney+ was in third position at 47.5%. Other OTT platforms, such as Apple TV, Paramount+, NOW TV, Sky, Infinity+, and DAZN were (also) subscribed to by a median of approximately 15%. In hindsight, the choice of using Netflix customisation settings as examples for the questionnaire was consistent with the majority of respondents having subscribed to said OTT platform, as they are more likely to be accustomed to (or acquainted with) the visual examples provided, given that they were indeed screenshots from the Netflix captions settings.

In the following question, respondents were asked whether they were aware of the option to customise the appearance of subtitles and captions on their preferred OTT platforms. In response, 81.6% of the respondents said that they were indeed familiar with this option, while 18.4% did not know about this option. One of the minor objectives of this study was also to raise awareness of this option among respondents, and it is possible that, after completing the survey, some returned to the customisation page on their preferred platforms and adjusted the captions according to their preference and/or needs.

Another question asked whether the captions settings shown in Figure 11 matched those selected on their OTT platforms, and the majority confirmed that they were either the same (54%) or more or less the same (32.4%), with a minority responding that they were either not the same (6.5%) or they were unsure or did not know (7.2%).

Figure 11: Netflix Default Captions Settings

The next four questions addressed key aspects of subtitle customisation, specifically focusing on font size, font type, text colour, and background colour (if any). Regarding font size, respondents were given the following options: small, medium, large, "it doesn't make a difference," or "it depends on the audiovisual content." As illustrated in Figure 12, the majority of respondents expressed a preference for medium-sized subtitles, followed by those who preferred a large font size.

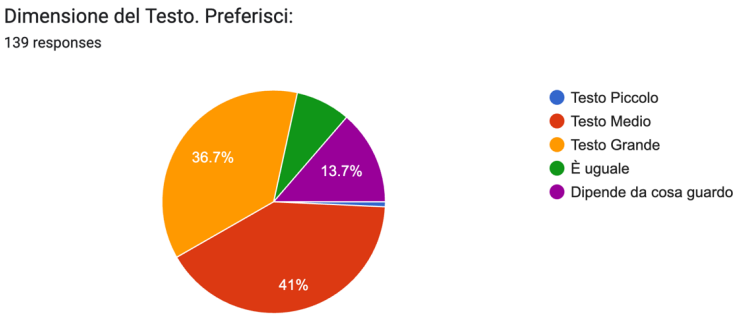

Figure 12: Font Size Responses

The following question asked respondents whether they found the default font suitable or if they preferred another font type. Although the questionnaire displayed the default font in context, it did not provide visual examples of alternative fonts; it only asked respondents if they preferred a different font type. Considering the wide array of available fonts, providing visual examples would have been beneficial to ensure precise feedback. However, listing and showing all the fonts available would have been counterproductive to the brevity of the questionnaire. Nonetheless, the majority of respondents (114) indicated that they found the default font used on Netflix to be suitable and appreciated, as shown in Figure 13.

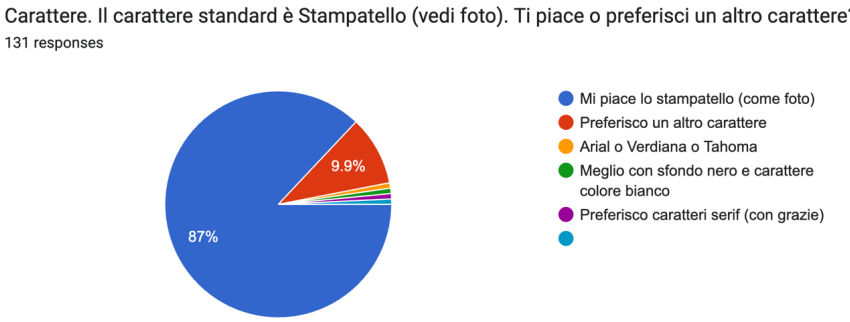

Figure 13: Font Type Responses

Regarding subtitle colour preferences, nearly 50% of respondents indicated a preference for white text. This is probably attributable to the fact that, in Italy, RAI SDH for TV—which uses colour coding for speaker identification as opposed to tags—employs white for the main character (RAI, 2021). Only a small percentage, approximately 10%, indicated a preference for yellow subtitles, which was considered as an alternative to white. Additionally, over 32% of respondents opted for 'other colours' without specifying their preferences. This lack of specificity could be attributed to the questionnaire's structure, as closed questions regarding specific colour options might have yielded more insightful data on the preferences of the Italian DHH community. Figure 14 illustrates these results, highlighting the dispersion of responses among different and unspecified colours.

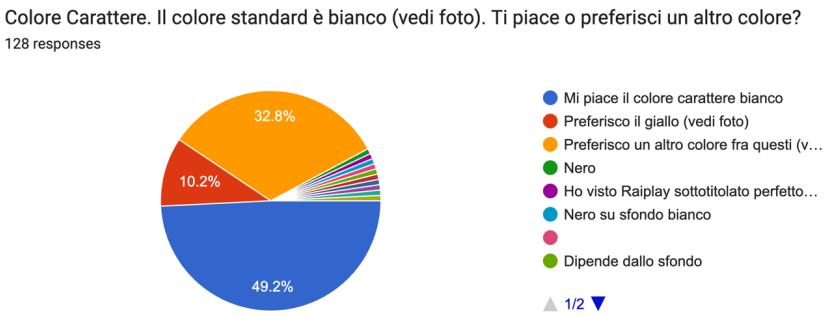

Figure 14: Text Colour Responses

The final question, before the comment section, asked respondents to elaborate on their preferences regarding the background of subtitles. In terms of preferences, more than 35% of respondents expressed a preference for subtitles with a black background. However, a significant portion also favoured a black window, or no background/window at all, as illustrated in Figure 15 below.

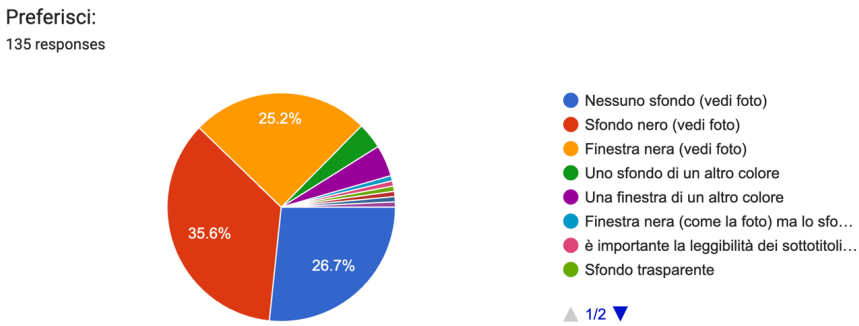

Figure 15: Background and Shadow Responses

Considering the preferences expressed by most respondents, the ideal format for subtitles would be as follows (see Figure 16 below): the text should be of medium size, ensuring readability without occupying too much screen space. A block font style is recommended for its clarity and ease of recognition for viewers. White text would provide a strong contrast against the background, improving visibility, particularly when displayed within a black box. The black box helps enhance legibility by clearly separating the text from the surrounding visual elements on the screen.

Figure 16: Ideal Subtitle Appearance

Nevertheless, it is worth noting that a significant portion of respondents expressed a preference for larger text size while maintaining the same formatting settings described earlier. Their ideal subtitle configuration would be as follows (see Figure 17 below): the text size would be increased to a larger format, enhancing visibility for viewers with visual impairments or those

viewing from a distance. Likewise, the text colour would continue to be white, continuing to provide strong contrast against the black background for enhanced legibility. Additionally, the subtitles would still be presented within a black box, providing a clear separation from the surrounding visuals on screen. This alternative configuration caters to the needs of viewers who require larger text size while maintaining the same visual clarity and prominence as the previous format.

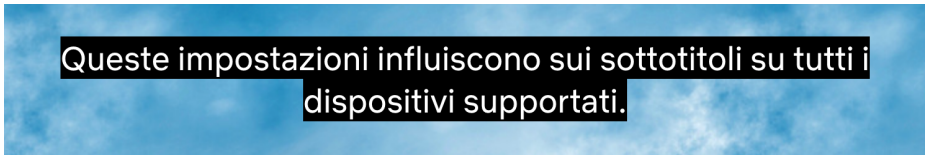

Figure 17: Ideal Subtitle Appearance (Alternative)

With the democratisation of subtitle settings, users now have the ability to adjust and customise the appearance of subtitles based on the content they are viewing and the circumstances of their viewing experience, whether on a large TV screen or a smartphone. This flexibility allows for subtitles to be adapted to individual needs and preferences, showcasing the advantages of customisation. However, it is important to note that this flexibility does not extend to the entire spectrum of SDH/CC available to the DHH community (particularly in Italy but also in other countries). For instance, SDH on TV, such as those originating from teletext systems used by broadcasters, are typically not customisable. In Italy, the public broadcaster RAI offers SDH in a style that may differ somewhat from the preferences indicated in this questionnaire. For clarification, Figure 18 provides a snapshot of SDH from a RAI TV series, illustrating the differences in presentation style. This disparity highlights a broader issue in the accessibility landscape: the inconsistency in caption customisation across different platforms and services. While OTT platforms increasingly embrace user-centred approaches by offering adjustable settings, traditional broadcasters often rely on standardised formats that may not adequately reflect the diverse needs and preferences of their audiences. Such limitations underscore the need for further innovation and standardisation in SDH/CC provision, ensuring that all forms of audiovisual content are equally accessible to the DHH community. This raises critical questions about how technology and policy can bridge the gap between traditional and digital media.

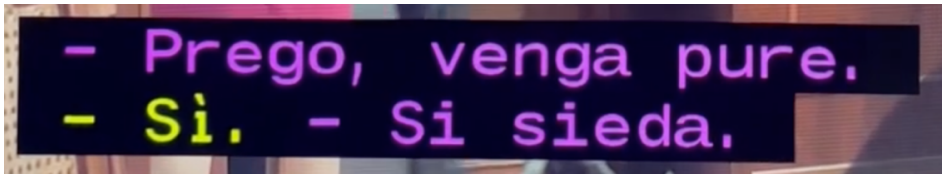

Figure 18: Snapshot of SDH on Italian TV Broadcaster RAI

The final section of the questionnaire invited respondents to share open-ended comments, allowing them to address topics not covered in the survey, explain their answers further, or provide additional feedback related to the appearance of subtitles. A total of 31 respondents provided comments, with many confirming their choices gathered from the multiple-choice answers. However, some respondents offered additional explanations or suggested alternatives to enhance the appearance of subtitles and improve the overall viewing experience for themselves and other segments of the population, such

as those with low vision or visual impairments. For example, some responses included comments, such as:

> "come detto nella scelta dello sfondo, è importante la leggibilità dei sottotitoli ma anche poter vedere il più possibile dietro il sottotitolo, cioè la scena. perciò il carattere deve essere bordato nero. sfondo nero o finestra nera toglie spazio visivo per il programma seguito, sia un reality o un film o serie tv. una buona alternativa sarebbe mettere sottotitoli al di sotto del riquadro visivo"
>
> [as mentioned in the choice of background, it is important for subtitles to be readable but also to be able to see as much as possible behind the subtitle, *i.e.*, the scene. Therefore, the font should have a black border. A black background or black window take away from the visual space for the programme being followed, whether a reality TV show or a movie or TV series. A good alternative would be to put subtitles below the visual frame][1]

Some respondents commented on the differences between SDH for television (*i.e.*, subtitles for the Deaf and Hard of Hearing commonly used by TV broadcasters and transmitted via the teletext systems) and CC for OTT platforms (digital captions, such as those discussed in this study). A frequently cited example was RAI's subtitles, which continues to be transmitted through their teletext system, called Televideo (Eugeni, as cited by Remael, 2007). These subtitles adhere to a specific style that cannot be customised or altered by the user: each character is assigned a colour (white, cyan, magenta, green, or yellow) based on their importance or number of lines, and sound effects are displayed in blue on a yellow background. This unique use of colour, typical of SDH for television (particularly for the Italian RAI broadcaster, but also in other countries), has arguably become the standard for high-quality subtitles or what many perceive as the ideal subtitle format.

This perception may be attributed to a segment of the population that is not digitally native and has experienced and appreciated television and films prior to the rise of OTT platforms, which gained mainstream prominence around 2007, "a decade after Netflix began mailing DVDs [playing] a significant role in the digitization of television content", as noted by Osur (2016: 4). In fact, the age range of respondents who compared subtitles of OTT platforms to SDH for TV primarily fell within the 46-60 or over 60 years age bracket. Clearly, the production of SDH for TV and captions for OTT platforms adhere to different guidelines and are transmitted in different ways, allowing for greater flexibility, adaptability, and customisation in the case of OTT platforms, while offering fewer or none of these qualities in the case of SDH for TV. Another noteworthy insight gathered from the comment section of the questionnaire is the clear demand for more subtitles across a wider range of programmes and immediate availability. Some of the responses wrote comments, such as "Full accessibility now" or "100% subtitles on RAI and Mediaset right away" or gave specific observations, such as "There are no subtitles on Sky Sport and MotoGP" or simply wrote "Subtitles 24/7". Furthermore, respondents also engaged in comments regarding technical and linguistic aspects of subtitles, although these were not directly investigated in this study or in the questionnaire. For instance, comments such as "subtitles are not always in sync" or:

[1] Comments longer than a sentence are cited verbatim from the questionnaire along with the author's translation. Shorter comments are directly translated into English for ease of reading.

> “Non servono nulla nulla quando si scrivono "musica triste", " musica tensione", musica incalzante", rombo del motore ", rumore del vento, gigolio della porta.. . La traduzione del "suono" per noi è sempre sconosciuto e va la pena di capirlo se non riesco mai a sentirlo.”
>
> [It’s useless when they write “sad music”, “tense music”, “music intensifies", “engine roar”, “wind noise”, “door jiggle”… The translation of "sound" for us is always unknown and it is not worth understanding it if I can never hear it.”]

4. Concluding remarks

While this study aimed to gauge the preferences and needs of the Italian DHH community, it is not exhaustive, as not all members of the community participated in the questionnaire. Therefore, a comprehensive understanding of the preferences and needs of the entire DHH population, both in Italy and worldwide, is not fully captured. Expanding the scope of future research to include a larger and more diverse sample would enable a deeper and more nuanced understanding of the Italian DHH population’s requirements. Such efforts could also contribute to the development of global accessibility policies and standards that better reflect the diversity within the different DHH communities, addressing variations in preferences influenced by cultural, technological, and regional factors.

This study, along with similar studies conducted in Italy and in other countries, should initiate or continue discussions with stakeholders, such as OTT platforms, urging them to make subtitles not only customisable but also more engaging for end-users who have demonstrated awareness of their choices and options. These discussions are particularly crucial as the media landscape evolves, and accessibility has become increasingly important for content providers. Stakeholders must identify and address gaps in existing services, such as inconsistencies in subtitle presentation across platforms. By fostering dialogue between users, platforms, and policymakers, the insights from this and other studies can be translated into tangible improvements. Moreover, collaboration with the DHH communities during the design and testing phases of new features can help ensure that the solutions implemented genuinely align with user needs and preferences.

Providing customisable subtitles is not only essential for accessibility but also represents a significant opportunity for platforms to attract and retain subscribers from diverse audiences. Major OTT platforms, such as, Netflix, Disney+, and Amazon Prime Video, which already offer extensive subtitle options, can gain a competitive edge by further enhancing these features. Accessibility has become a key differentiator in the streaming market, and inclusive design is increasingly seen as both a moral obligation and a business strategy. The customisation features of subtitles, as explored in this study in relation to the Italian DHH community, can serve as a catalyst for increased subscription rates. Ultimately, this results in greater revenue for OTT platforms, which in turn should (and often do) invest in research and development to meet users' needs and preferences.

The need to scrutinise subtitle quality extends beyond their mere appearance and style. It calls for a comprehensive evaluation of multiple factors, including text adaptation, syntax, vocabulary, and the core elements of any SDH/CC provision. Key aspects such as, speaker identification, the portrayal of sound effects, the inclusion of paralinguistic elements, and the treatment of music and songs are critical in providing an inclusive and enriching viewing experience for all, particularly those who rely on subtitles for comprehension.

However, it is crucial to acknowledge the persistent challenge of quantity in subtitle provision. While most OTT platforms offer some form of subtitles or captions, the same level of accessibility is often lacking in linear TV broadcasting and other VoD platforms. This glaring discrepancy underscores the ongoing struggle of the DHH community, not only in Italy but also globally, to have their rights and needs recognised and prioritised in media accessibility initiatives. Accessibility is not merely a matter of convenience—it is a fundamental human rights issue. The disparity in availability often stems from outdated technologies or a lack of regulatory enforcement in certain regions, leaving many DHH individuals without adequate access to media content. This issue highlights the importance of implementing consistent global standards for accessibility across all platforms. Advocates, policymakers, and industry leaders must work together to close this gap, ensuring equal access to entertainment and information for all users, regardless of platform or geographical location. In fact, the DHH community continues to advocate tirelessly for equal access to information and entertainment, emphasising the importance of subtitles as a gateway to full participation in society. Therefore, efforts to enhance subtitle quality and availability must be approached with a sense of urgency and commitment to social inclusion.

In essence, advancing subtitle quality entails a multifaceted approach that encompasses both technical refinements and broader systemic changes. It requires collaboration among content providers, broadcasters, technology developers, and regulatory bodies to establish standards that prioritise accessibility and user experience. Engaging directly with the DHH community is equally critical, as their feedback can help shape solutions that are both practical and impactful. By fostering dialogue and cooperation, the collaboration between all parties involved—stakeholders, users, broadcasters, OTT platforms, subtitlers, academics, etc.—will steer the conversation towards a future where subtitles not only meet basic standards but also enrich the viewing experience for all audiences, regardless of their auditory abilities. This collaborative effort could redefine media accessibility as a cornerstone of audiovisual content, paving the way for systemic changes that benefit everyone.

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