Subtitling for deaf and hard of hearing audiences
Moving forward
Josélia Neves

Introduction
Any attempt to map subtitling for deaf and hard of hearing audiences (SDH) 50 years after its introduction on television will show that this audiovisual translation (AVT) modality has since come a very long way in terms of its acceptance, provision of services and research activity. Such subtitles are designed for people with hearing impairment because, in addition to rendering speech, they identify speakers and provide extra information about sound effects and music. Quite a novel concept to many Europeans only a few years ago, and an understudied topic even at the turn of the century, in recent years SDH has attracted the interest of regulators, professionals and academics, and particularly that of AVT researchers, who have contributed to raising awareness of its affordances and complexity. This has occurred through the study of SDH from numerous standpoints, the introduction of dedicated training at graduate and post-graduate levels, and the creation of research opportunities that bring together academics and professionals from different fields.

Most of the latest developments in SDH may be attributed to a bi-directional circular motion, whereby academia and the industry feed into each other and work together towards understanding and improving actual services. Further momentum for SDH has been provided by the opportunities and demands of a rapidly changing technological environment, in which convergence has allowed for the diversification of self-tailored services (e.g. streaming films on handheld devices that allow viewers to choose the subtitle language, size and positioning to suit their individual preferences). In addition, the recognition of the rights and needs of all individuals has shifted emphasis away from specific constituencies (e.g. people with disabilities) and focused instead on universal accessibility ‘everywhere, everywhen, everyone’ (Socol 2008).

The impact of such ongoing changes on SDH is manifold, as will be elaborated in this chapter. After delivering an overview of the conceptual frameworks and the terminology used in this field of professional practice and scholarly enquiry, and surveying a range of applications and norms in SHD, this chapter will gauge the potential to challenge current conventions, beliefs and practices.
Key terms and concepts in subtitling for deaf and hard of hearing

If we are to take the English language as a starting point, two terms are traditionally used to refer to the subtitles that were introduced on television in the 1970s (Ivarsson and Carroll 1998: 24) for the benefit of people with hearing impairment. Even though the services provided were substantially similar in remit, differences in the technology enabling the broadcast of these subtitles and in the intended audience dictated that ‘teletext/closed subtitling’ and ‘subtitling for the deaf and hard of hearing’ (SDH) be used in the UK, and ‘(closed) captioning’ (CC) in the US. Influenced by the practices in these two leading countries, other countries followed suit in the provision of the service, adopting the techniques and finding equivalent terms in their different languages—a process that involved deciding whether the subtitle addressees would be referred to explicitly or omitted in the chosen terms (Neves 2008).

When first introduced, SDH and CC were ‘same language’ (intralingual) written renders of the screen dialogues and accounts of other aural components (sound effects and music) in audiovisual materials, to the extent that this type of audiovisual transfer designed specifically for the benefit of hearing impaired viewers was regarded as a form of ‘transcription’ or ‘adaptation’, rather than translation proper. This belief has remained unchanged in many circles, and both the terminology and the practices that they entail have found their way into other media and settings beyond television broadcasts. For instance, in the context of global distribution of media content, ‘captioning’ is the preferred term by the DVD industry; as far as the Internet is concerned, YouTube favours ‘CC’, while Netflix uses ‘SDH’—in all cases, the subtitles reflect the language of the source text.

‘Subtitling for the deaf and hard of hearing’, commonly abbreviated as ‘SDH’ or ‘SDHH’ (Utray, Pereira and Orero 2009), has become the standard term in academic settings—perhaps as a reflection of the large number of European researchers working in the field. Politically and referentially inappropriate for grouping various audiences—d/Deaf and hard of hearing—under one label (Neves 2005, 2007a, 2008), the term has been nuanced to read as ‘Subtitling for deaf and hard of hearing audiences’ (Neves 2007b) or ‘Subtitling for deaf and hard of hearing viewers’ (Romero-Fresco 2009 and 2015). The later designation has been adopted in two large-scale European projects—Digital Television for All (DTV4ALL) and Hybrid Broadcast and Broadband TV for All (HBBTV4ALL)—and, hence, reinforced the understanding that a diverse constituency of hearing impaired viewers can be catered for through this service.

Despite the above-mentioned nuances, both CC and SDH fail to account for the full scope of this AVT modality. At present, there is a widely held consensus that SDH delivers intra-lingual or interlingual ‘translation’; can take the form of burnt in (open) or superimposed (closed) subtitles; may be prepared beforehand or provided live; can be provided in an edited or (near) verbatim form; refers to verbal and non-verbal (acoustic) information; is meant to be used preferentially by people with hearing loss, although it is equally useful for people with intellectual or learning difficulties or with a lesser command of the spoken language (e.g. immigrants).

This range of options, which can be combined in various ways and with different purposes, raises questions about the adequacy of the terminology used in this field. ‘Enriched (responsive) subtitling’ would reflect more closely what SDH has become in the present technological age. At a time when ‘enriched content’ and ‘responsive design’ have become
core concepts in digital environments, using new terminology to refer to what has now become a totally different reality would strip the ‘old terms’ from their biased connotations, and speak for a convergent and user-centred reality in which subtitles are part of a complex yet flexible multi-layered media landscape. ‘Enriched’ speaks for all the added elements that make subtitles relevant to specific users and ‘responsive’ for the standardized properties enabling subtitles to travel across platforms and media. The term also accounts for the growing interaction between the person and technology, at both ends of the process: production and reception. Significantly, the wealth of content presently rendered in the form of online subtitles has an ever-growing afterlife, beyond their immediate purpose, as they become searchable big data. For all these reasons, the adoption of a totally new term to designate this range of subtitling practices would definitely do away with much of the confusion and inaccuracy of the terminology that is presently in use, while removing the stigma of disability and allowing for developments already in progress.

In the meantime, while terms such as SDH or CC may soon lack currency, they are still productive in discussions of the basics of this AVT modality, as used in conventional settings, for the benefit of audiences with hearing impairments.

The road to acknowledgement

Presently, the reasonably established SDH/captioning mode is widely accepted as the most valuable means to provide hearing-impaired citizens with access to information and entertainment. Paramount to this acknowledgment has been the enforcement, on 3 May 2008, of the UN Convention on the Rights of Persons with Disabilities and its Optional Protocol (A/RES/61/106), ‘the first comprehensive human rights treaty of the 21st century’ (Enable, n.d.) that, by sporting 82 signatories to the Convention and 44 signatories to the Optional Protocol, has brought to the fore the rights of people with disabilities. Article 9 of the Convention places particular emphasis on providing people with disabilities with access to information and communication, as a means to allow them to ‘live independently and participate fully in all aspects of life’ (UN 2006: 9). This new socio-political environment has had a top down impact on services offered to people with disabilities at national level, through the enforcement of national laws and regulations on multiple spheres, including those pertaining to access to information and, in particular, to television and the Internet—the main platforms used for the universal distribution of information content. This contextual framework has obviously had a direct impact on the offer of accessibility services, such as subtitling, audio description and sign language interpreting, and has led to the introduction of SDH in a number of countries and an increase in the offer in many others.

As we stand today, the provision of SDH on audiovisual content—and particularly on television, still seen as the preferential platform for easy open access—is progressing at three quite distinct paces. Pioneering countries, such as the United States, Canada, the United Kingdom, France, Australia and Denmark, now sport close to 100 per cent of subtitled television programmes on their national open-to-air channels, with a spill over to their web-based video object (VoB) counterparts, using a mix of prepared and live subtitling methods (cf. Remael 2007, Romero-Fresco 2015, MAA 2015). Broadcasters, such as the BBC, are making a great effort to transpose the 100 per cent subtitling benchmark to their online video on demand (VoD) services. Having achieved their target quota on television, the BBC has now turned to improving the quality of its services, while working towards increasing subtitle availability on their VoD streaming platform. Once this has been accomplished, broadcast subtitles will be transferred to other media automatically through ‘an
audio fingerprinting algorithm to represent the broadcast content and web clips to speed up the search whilst providing sufficient temporal accuracy’ (Armstrong et al. 2015: 4). This line of progression speaks of the dynamics of accessibility services in the fast-changing global context in which the first step still is ‘to make available’, then ‘to increase quantity’, and only then to truly address ‘quality’. Once this is also in place, there will be a drive for ‘diversity’, whilst still improving on the previous two requirements: quantity and quality.

A second group of countries, including Italy, Spain, Portugal, Germany, Poland, Flemish-speaking Belgium, the Netherlands and Brazil, have been making steady progress towards implementing and increasing their offer across public and private channels and platforms. Such efforts, which began in the 1980s and 1990s, have been all the more successful when driven by lobbying forces and supported by research. This is the case of Spain, Portugal, Italy and Poland, for instance, where a significant body of applied research carried out in the last two decades has stimulated the development of accessibility services. Some of them have even experimented with new approaches. For example, the Portuguese national broadcaster TRP provides live subtitling through automatic speech recognition, doing away with the need for respeaking, while also providing live commentary subtitles on sports events, such as football matches. Another instance of ‘newcomers’ building upon other countries’ practices is the Spanish UNE 153010 Standard (AENOR 2012), which moves away from established SDH norms in contexts with a longer tradition and advocates different colour and placement conventions.

A third scenario may still be sketched. However encouraging the outlook may be in Europe and in North America and Australia, large regions of the world remain uncharted, as far as SDH is concerned. Initial steps towards the introduction of SDH are taking place in South America, Asia, Southern Africa and the Middle East, where academia appears, again, to be driving change and developments in the industry. Even in the current context of global audiovisual flows, much remains to be done if deaf and hard of hearing communities all over the world are to be able to exercise their right to access information and entertainment, on a par with members of their respective wider communities.

Stakeholders for change

The contexts where accessibility services have become mainstream are those in which stakeholders—legislators, providers, producers, distributers and end-users—have combined efforts to support and effect change. Dynamic systemic environments where relationships of trust are built are more conducive to new developments. In the case of SDH, one particular group of stakeholders, the Deaf community, is ‘making a difference’ by enhancing the quantity and quality of services provided in their national contexts. With the recognition of sign languages in different countries and the increased provision of Deaf education in mainstream school systems, Deaf communities have become more engaged and have gained lobbying force. By taking a more active role in society, airing their views and needs and participating in collaborative R&D projects, hearing impaired individuals and their representative associations have contributed towards developing the subtitling services that are made available to them. In some cases, organizations are formally involved in working groups, writing policies and standards, such as the Canadian Closed Captioning Standard (CAB 2012) or the Spanish UNE 153010 standard. Deaf associations have also collaborated in national and international research projects—e.g. SAVAS (Sharing AudioVisual Language Resources for Automatic Subtitling), SUMAT (Online Service for Subtitling by Machine Translation), DTV4ALL and HBBTV4ALL. In some cases, individuals have contributed by filling in
surveys or taking part in specific case studies. Others have turned to social media in an effort to raise awareness—as illustrated by the campaign a young Portuguese deaf father launched through social media, demanding that Disney provide subtitles on their commercial releases, so that he and his family (and many other deaf families) could enjoy watching them together. The power of collective lobbying has also been felt in the action deaf viewers have taken against Netflix, Fox, Universal, Warner Bros and Paramount, accusing them of discrimination for not providing SDH on their streaming services. A protest that started in 2012 with petitions and lawsuits filed in the US, demanding the provision of subtitles in the English language, has since cascaded down to lesser-spoken languages, as is the case of Greek or Portuguese. These and similar actions prove that deaf communities are developing a heightened awareness of their rights and the will to exercise them.

This active stance is revealing of the important role that end-users play in the chain of subtitle supply. By becoming involved at the various levels of this systemic chain, deaf viewers are actively engaged in promoting quantitative and qualitative improvements. However, it should be noted that no service will ever be suitable for ‘all’ users: those who participate actively in these campaigns represent only some of the different constituencies of individuals requiring subtitling for access. Furthermore, by expressing their preferences, d/Deaf viewers are not necessarily providing proof of adequacy. This can only be achieved through objective data captured via eye trackers, magnetic resonance imaging (MRI) and electroencephalographies (EEG). As Romero-Fresco (2015: 10) puts it, ‘what viewers think of SDH, how they understand these subtitles and how they view them’ does not necessarily match.

**Quality and standards**

Achieving ‘quality’ appears to be the central aim of the now established providers of accessible content, who have contributed towards normalization by writing published and/or in-house standards and guidelines. These are mainly regulatory bodies, broadcasters or service providers, within contexts where acceptable ‘quantity’ levels in the provision of SDH have been attained. Among the best-known efforts, in the form of standards, one may list Ofcom’s *ITC Guidance on Standards for Subtitling* (1999), the American DCMP Captioning Key (2017), the Spanish AENOR UNE 153010 (2012), the Canadian Closed Captioning Standards and Protocol for Canadian English Language Broadcasters (CAB 2012) or the Australian *Broadcasting Services (Television Captioning) Standard* (ACMA 2013)—all focusing on television subtitling. There are other instruments pertaining to other platforms, including those listed in the eAccess+ wiki or the ATVOD guidelines (2012), for instance. The outcomes of big-scale research projects, in the guise of deliverables, white papers or recommendations, or of smaller projects—often conducted by individual PhD researchers (e.g. Neves 2005, Kalantzi 2010, Arnáiz-Uzquiza 2013, Zárate 2014, Muller 2015, among others)—have also served to put forward recommendations to improve subtitle quality. These have served to harmonize subtitling practices in different countries, but have also served as ‘inspiration’ to those introducing subtitling services in new contexts. This speaks also of the important role these documents play in shaping practices at a global level, an added responsibility for anybody attempting to develop guidelines to be followed and taken as models for best practice. The importance of model standards and guidelines can be illustrated by the adoption of the BBC’s approach to SDH by most equivalent SDH services around the world. This emphasizes the importance of issuing quality standards that are based on research, while remaining aware that no set of guidelines will ever manage to apply across all contexts and scenarios.
However useful practical standards and guidelines may be to those studying, working, wishing to work in the field, ‘[q]uality can be perceived very differently by those involved in the production and consumption of translated audiovisual products depending on their needs and expectations’ (Baños and Díaz Cintas 2015: 4). Any attempt to understand the diversity of issues that contribute to the creation of effective subtitles, will need to take into account every step and stakeholder in the production chain, and most importantly, get to know the needs of the end-user—the ultimate beneficiary of the service. This interest in understanding reception by measuring cognitive load and attention through technological means has offered important insights into the way viewers engage their senses in response to audiovisual stimuli. Research on these issues shows that people’s perception—as interrogated through questionnaires and interviews where people express their preferences—does not tally with effectiveness—measured objectively through physical reactions to stimuli. The notion of quality would thus appear to be subjective and difficult to capture through qualifiable and quantifiable monitoring. Understanding, readability and enjoyment may be contingent on external parameters such as time of day, state of mind, company and physical environment, as well as the degree of interest or previous knowledge in a topic. Multi-disciplinary large-scale collaborative research projects aiming ‘to establish objective benchmarking for service quality’ (HBB4ALL 2014) may lead to ‘preferable’ parameters, with the caveats that (i) ‘quality is not a universal and unique measure, but one encompassing the many definition [sic] and metrics for quality from the perspectives of the key stakeholders in the value chain’; and (ii) ‘too many stakeholders are involved when broadcasting media accessibility content to define one quality for all . . . for all services; for all stakeholders; for all processes; for all countries; for all language conditions; for all budgets’ (ibid.).

As far as quality considerations are concerned, it should be noted that the scope and spread of SDH is growing, with much of it happening beyond established contexts. The growing dynamics of volunteer subtitling or fansubbing, and its potential capacity to fill in the gaps in contexts where SDH is not available yet—as is the case described by Abe (2006), where volunteers are providing ‘summarized captioning via Computer Assistance’ in Japan—is bound to change the landscape. Of equally great importance is the growing use of SDH for educational purposes, in schools and in smaller communities, where products can be tailored to the specific needs of the groups they are intended for. Small-scale activities in relatively contained contexts will allow for the provision of fit-for-purpose solutions that may not have taken norms or guidelines into account. Non-professional subtitlers, such as teachers and educators, often work without previous training in subtitling, driven only by their wish to create an effective form of mediation, or an optimal learning or entertaining experience. This desire often allows for creativity and experimentation beyond regulated norms. In their attempt to find solutions that will prove useful and adequate to their specific circumstances, such individuals will often follow their intuition and their experiences as users. These ad-hoc practices could serve as inspiration for the enhancement of mainstream SDH, given that innovation often derives from the need to solve small but real problems. This may also mean that small-scale case studies end up informing guidelines with a broader scope and challenging conventional practices.

**Norms and transgressions**

In what appears to be a contradictory strategy, scholars are aiming to identify the ‘Universals of SDH’ (Romero-Fresco 2015: 14 and 350) by analyzing user preference and provider
performance while, at the same time, technology is contributing to the fragmentation of audiences and offering new opportunities for individual viewership and tailoring. The growing offer of online catch-up services, cross-platform broadcasting—where someone can start watching a programme on one platform and seamlessly continue on a different one—and the proliferation of short-form video content are bound to impose new requirements on the way SDH is provided, so that it too can travel across platforms and formats. Standardization or unification, on the one hand, will guarantee transferability; but diversity will also be required if end-users are to be given a choice. This fragmented environment may require that such universals be found, for these ‘do not have prescriptive force’ (Chesterman 1993: 4) as norms do. However, understanding norms is still necessary to identify best practices and to ‘regulate’ the production of subtitles that will suit the relevant purpose in each setting. In the case of SDH, subtitles should provide viewers with supplementary information on non-verbal, acoustic information and allow for easy readability and comprehension.

Most of the norms in use, some of which take the form of the guidelines listed above, have been specifically created for teletext/closed captioning, and devised within the limitations that the ‘old’ systems imposed. Initially, analogue teletext technology allowed for very little diversity and its output was often difficult to read—a situation that has now changed, with digital teletext now providing better standards. Interestingly enough, even if digital technology is allowing for more diverse outputs, most standards in use are still close to those of teletext on analogue television, resembling the ‘colours, font size, number of lines, subtitle position, paging, text division, subtitle speed, subtitle synchronization, spelling, grammar issues, subtitle editing, contextual information and information provided on teletext pages’ (Bartoll and Martínez Tejerina 2010: 70). Although technology provides other options, traditional parameters are still relevant in many ways, for they have become engrained as ‘expectancy norms’ and become ‘norm-models’ (Chesterman 1997: 45) at various levels. In their current form, norms guarantee harmonization within specific contexts, e.g. guidelines used by subtitlers working for a particular company or broadcaster or imposed by regulators at national levels. But ongoing efforts to capture SDH universals to ‘harmonize SDH practices across Europe’ (Romero-Fresco 2015: 10) may come to prove that identifying practices that facilitate understanding and comfort is more important than normalizing.

While large-scale international collaborative projects are working towards establishing standards and harmonizing outputs, smaller-scale research by smaller groups or individuals is looking into creative approaches to SDH, by testing positioning in ‘dynamic subtitles’, visual imagery (e.g. emoticons, cartoon bubbles and creative typefaces) and haptic devices. Examples of these innovative trends are the work of the BBC Research and Development team (see Brooks and Armstrong 2014, Brown et al. 2015) exploring subtitle portability and dynamic subtitle placement; McClarty’s (2012) experiments with creative subtitling; or the work carried out by Fels and her team on ‘emotive subtitling’ (Fels et al. 2005). Younger researchers, such as Sala Robert (2014) and Al Taweel (2015) have experimented with cartoon speech bubbles or emoticons to capture paralinguistic features of speech; and Nanayakkara and his team have tested a ‘haptic chair’ and a computer display of informative visual effects’ to convey music to deaf viewers (Nanayakkara et al. 2013: 116).

These two apparently opposing approaches—the traditional and the innovative—are bound to converge, take advantage of the technological affordances of digital formats, and respond to user preferences—exceeding what were, at some point, fictional hypotheses about individuals being given the opportunity to tailor subtitles to their preferences and needs (Neves 2007c: 96–97). The introduction of pull-protocols to audiovisual content will demand for similarly ‘pull-able’ responsive subtitles, using cumulative information and
Subtitling for the deaf and hard of hearing

adaptable formats. Research towards the provision of such ‘adjustable’ subtitles is ongoing and the BBC has taken the lead in implementing responsive subtitling for its online content. In 2015, the BBC implemented its responsive online design, providing a ‘stream of video feature data’ with ‘subtitles that can be resized and reformatted on the fly in response to device orientation, screen size and user preference, without obscuring important features’ (Brooks and Armstrong 2014).

The direction in which technology is taking the distribution of content, and that of subtitles, is bound to have an impact on the position these hold in the production workflow. Subtitling in the past has been perceived as an afterthought, an added ‘nuisance’ that interferes with the original text, covering important information, as well as an additional load of trouble and (rarely budgeted) extra expense. These creative approaches and even the user-centred options will make it necessary for subtitles, in general, and SDH in particular, to be integrated at an early stage—preferably while the original product is under development, as per Romero-Fresco’s (2013) ‘accessible filmmaking’ approach, which is very much in line with practices in the videogame and localization industries.

It should be noted that the greater the freedom of choice that is given to the end-user, the more stable the standards of transmission and the more interchangeable the units of information (mostly subtitles) need to be. On the one hand, providing viewers with the capacity to personalize font sizes and colours, or subtitle positioning on a screen, may only require the availability of a set of predefined options that work within different screen sizes and types. The same applies to the addition of extra layers of information—e.g. giving audiences the means to activate tags for sound effects and music or alternative solutions such as the insertion of emoticons. However, other types of choices (e.g. verbatim vs. edited subtitles) might prove more difficult to implement. Manipulating the content to promote readability, understanding and enjoyment is the crux of ongoing research, and an important element in the very definition of quality in SDH.

Ongoing debates and research opportunities

The idiosyncrasy of SDH as a text-type can be accounted for in terms of presentation and content. Both these elements converge and interact, but content is the more complex of the two. By analyzing viewer preferences though questionnaires in triangulation with technology-based empirical research—using eye tracking, for instance—researchers can gauge the impact of different formats on the intake of audiovisual information (see Armstrong et al. 2015, Romero-Fresco 2015). But if we are to gain a better understanding of what ‘quality’ entails in the context of SDH, we will need to grasp what makes achieving readability and understanding major problem areas. A greater refinement of the ongoing research on reading speeds, chunking and comprehension and editing is vital to identify ‘preferable’ subtitling strategies or even variable subtitle types that allow for choice, as is done with text presentation on screen.

In truth, these issues are to be found in all types of subtitling, but they gain greater pertinence in SDH, given the profile of the intended end-users. For instance, hearing-impaired viewers may have little or no access to aural cues, may (or may not) rely on visual cues such as lip movement, and may read subtitles in what is their second language. These particularities will dictate requirements that are not found in subtitles for hearing viewers.

The equally longstanding debate over verbatim vs. edited subtitles is also far from being resolved. On the one hand, deafened and hard of hearing viewers, who rely on residual hearing and lip reading for accessing speech, show preference for verbatim subtitles—an
approach that would appear to be endorsed by deaf associations and broadcasters (Jensema and Burch 1999, Schilperoord et al. 2005, Hersh 2013). On the other hand, scholars working in AVT and many others from deaf studies have repeatedly made a case for edited subtitles (Neves 2005, Romero-Fresco 2009, Kalantzis 2010). Some, as is the case of Ward et al. (2007), draw attention to the fact that each viewer’s reading competence will be paramount in determining how effective different subtitle types are. As part of a study involving children, Ward et al. (2007: 27) conclude that ‘research needs to focus on the comprehension elements of captions, in a manner similar to the research on reading print in texts’. It is therefore important to understand how deaf and hard of hearing people read in general, only then, may we truly understand how subtitles should be written and presented to boost their understanding and performance as readers.

It should be noted, however, that reading subtitles will always be quite different from reading static text on paper, or even on screen. As Kruger et al. (2015) explain, ‘the reading of subtitles compete [sic] with the processing of the image, sometimes resulting in interrupted reading’; additionally, those temporal limitations regarding the presence of subtitles on the screen mean that ‘readers have less time to reread or regress to study difficult words or to check information’. Gaining a better understanding of what might improve readability standards is particularly urgent, given that, as Bartoll and Martínez Tejerina (2010: 70) categorically put it, ‘subtitles that cannot be read by deaf people or that are read with difficulty are almost as bad as no subtitles at all’.

Readability, as understood in this context, brings form and content together to create meaning and foster understanding. Although it may be possible to check how far people get through a subtitle by analyzing eye-tracking data, measuring understanding and identifying the variables that enable it is far more complex and requires detailed neuropsycholinguistic studies. Ongoing studies on the individual elements that contribute to enhancing subtitle readability and understanding seek to determine ideal reading speeds and subtitle presentation rates, two aspects on which academics do not seem to agree. While the outcomes of the DTV4ALL European projects tend to postulate a subtitling speed of 150 wpm as ideal for ‘allowing the viewers to spend roughly as much time reading the subtitles as looking at the new image’ (Romero-Fresco 2015: 341), other studies reported in Sandford (2015) contend that subtitles should follow the natural speed of speech, for ‘the perceived rate of subtitles is not representative of the actual speed but is a symptom of technical issues and the overall natural feel of the programme’ (Sandford 2015: 66). These discrepancies between studies informed by empirical research techniques and the input of significant numbers of informants confirm that further research is needed.

Equally challenging opportunities for research in SDH may be found in gauging the impact of subtitle chunking on comprehension. Early studies (Neves 2005) suggest that segmentation may play a very important role both in incrementing reading speed and in improving comprehension. The findings from the DTV4ALL project involving hearing subtitle readers (Rajendran et al. 2013) suggest there is no significant relation between segmentation and comprehension, but that good chunking contributes towards a better balance between subtitle reading and screen gazing. These scholars go on to suggest that, as happens in recorded subtitling, text chunking by phrase or by sentence be adopted in live subtitling ‘by European subtitling broadcast services and media companies’ (Rajendran et al. 2013: 19).

In addition, readable subtitles will result in a better overall experience that will facilitate understanding, and hence lead to enjoyment. Broadcasters are aware of how important it is for viewers to enjoy their programmes. For instance, Ofcom (2015: 1), clearly states that ‘television service providers should promote the enjoyment and understanding of their
services for people who are deaf or hard of hearing amongst other things’. In so doing they acknowledge that this segment of the population requires special attention, as they account for a significant share of regular television viewers.

As discussed in this section, the effectiveness of SDH revolves around three main criteria: readability, understanding and enjoyment. Achieving these will guarantee a fulfilling ‘user experience’—a concept used in reference to human-computer interaction but that can also be applied to the active consumption of subtitled audiovisual content. This extension of the concept is particularly relevant at a time when subtitles are becoming part of the interactive online experience. When viewers are given the opportunity to become actively involved in the design of their own viewing parameters, there is bound to be yet another shift in the understanding of ‘quality’, for that will be measured on individual standards rather than on universals.

**Conclusion**

The present SDH landscape is undergoing rapid change. While VoD and web-based content is gaining momentum, attention still needs to be given to regular television broadcasting in conventional settings, as it is still a vital part of most people’s everyday life—although, in some cases, television broadcasters are providing less SDH on their mainstream channels. As Muller (2012: 271) shows, in France ‘two of the three public service channels that have been offering, albeit restricted, SDH, for nearly thirty years, are currently providing the least.’

Now that the switchover from terrestrial to digital TV is almost complete—with a move from conventional 4:3 PAL standard definition TV to 16:9 flat widescreen modern high definition TVs—and smart TVs are finding their way into the homes of most westerners, various access issues persist. Among these, technical constraints continue to make it difficult to zap between programmes without losing the subtitles, or impossible to receive subtitles through set top boxes or cable distribution, not to mention the difficulties in recording or reactivating such subtitles on catch-up TV, to name but a few.

Still lagging far behind, developing countries have very limited, if any, SDH on television, and web streaming is still irregular in places where Internet connectivity is still patchy. Furthermore, in gauging the potential for further development of online distribution, it should be noted that the current provision of SDH is predominantly in English, even though deaf and hard of hearing people all over the world will be wanting to read subtitles in their own languages.

As online connectivity continues to expand, and new commercial, ethical or statutory regulations come into force, the basic recommendations for all types of accessibility services for video on demand put forward by the Authority for Video on Demand (ATVOD 2012) apply also in the case of SDH online services. Such recommendations involve (1) publicizing the presence of SDH, (2) ensuring consistency of provision, in terms of continuity across programmes, (3) facilitating the activation of services and consistency across interfaces, (4) monitoring playout and checking for quality by meeting focus groups and collecting feedback and, finally, (5) consulting with stakeholders. This list provides a multifaceted framework for research that has to be undertaken to guarantee access in the present web-based environment.

**Summary**

As a field of professional practice and scholarly enquiry, SDH is currently traversed by multiple tensions and driven by attempts to enhance quantity, quality and diversity. Heightened
general awareness, public demand and regulations will play a major role in increasing the provision of SDH, as shown by the experience of countries that have overcome the first stage in their implementation of accessibility services. Better quality requires a more refined understanding of the profile and needs of different audiences. Finally, quantity and quality will necessarily be driven by the ever-growing affordances of technology, which is fragmenting audiences, allowing for individualized user experience, and calling both for normalization and creativity—thus allowing for a variety of solutions on a broad spectrum of devices and platforms.

As user-centred technological environments become ever more ubiquitous, viewers will be able to choose specific formats that suit their personal needs. The traditional disability-oriented ‘subtitling for the deaf and hard of hearing’ paradigm will thus shift towards a more encompassing framework characterized by the use of ‘enriched (responsive) subtitles’. Adopting a non-discriminating terminology will signal a greater degree of respect for diversity, consistent with the spirit of the 2001 UNESCO Universal Declaration on Cultural Diversity and the 2006 UN Convention on the Rights of Persons with Disabilities. This should not mark ‘the end’ of SDH, but rather the incorporation of SDH standards as a subtitling variety to be made available to every viewer on demand. Although this might take longer to achieve on traditional media (e.g. television or the cinema), it is certainly the way forward on versatile web-based platforms.

Further reading

Matamala A. and P. Orero (eds) (2010) Listening to Subtitles. Subtitles for the Deaf and Hard of Hearing, Bern: Peter Lang | An interesting compilation of articles that account for various European research projects, covering topics such as subtitle formats, criteria for readable subtitles, SDH for children or sign language for access to television.


Swarkowska, A. (2013) ‘Towards Interlingual Subtitling for the Deaf and Hard of Hearing’, Perspectives: Studies in Translatology 21(1): 68–81 | This article examines interlingual subtitling for the deaf and the hard of hearing as a self-contained AVT modality. Although interlingual SDH shares some common ground with its elder siblings, i.e. standard interlingual subtitling for hearing viewers and monolingual subtitling for the deaf and the hard of hearing, it differs from them in terms of its text reduction, redundancy and editing conventions.

Related topics

3 Subtitling on the cusp of its futures
7 Respeaking: subtitling through speech recognition
8 Audio description: evolving recommendations for usable, effective and enjoyable practices
9 Surtitling and captioning for theatre and opera
10 Game localization: a critical overview and implications for audiovisual translation
14 Psycholinguistics and perception in audiovisual translation
17 Multimodality and audiovisual translation: cohesion in accessible films
22 Eye tracking in audiovisual translation research
27 Audiovisual translation and fandom
31 Accessible filmmaking: translation and accessibility from production
References


DCMP (Described and Captioned Media Program) (2017) *Captioning Key*. Available online: http://www.captioningkey.org/about_c.html [last access 20 December 2017].


Subtitling for the deaf and hard of hearing


Sitography

DTV4ALL (Digital Television for All): http://www.psp-dtv4all.org/ [last access 20 December 2017].

HbbTV4ALL (Hybrid Broadcast and Broadband TV for All): https://cordis.europa.eu/project/rcn/191771_en.html [last access 20 December 2017].

SAVAS (Sharing AudioVisual language resources for Automatic Subtitling) https://cordis.europa.eu/project/rcn/103572_en.html [last access 20 December 2017].