

Response to “The Quality of Live Subtitling”

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Introduction

Ofcom’s report “The quality of live subtitling” is not only welcome as a consultation document designed to improve the viewer experience in the UK, but also as a thorough and clear explanation of the technique and challenges involved in the production of live subtitles. As such, it has been informed by expertise from broadcasters, access service providers, viewers and academics. It thus helps to bridge the gap between academia and the audiovisual industry, showing that academics can work alongside professionals in the field to provide research that can improve the access services offered in the UK.

Some of the information included by Ofcom in this document and the research available to date shows that the current standard of access services and more specifically (live) subtitling in the UK is of very high quality. This is also the case if we compare it to the standard of other countries in Europe and other continents in the world. Yet, viewers have a right to demand even more quality. After all, the fact that the UK has been among the first countries to provide live subtitling also means that there has been more time to improve these services and to look elsewhere at countries where interesting developments are taking place.

Ofcom’s report and the subsequent data that will be requested from broadcasters and access service providers will be very useful for the viewers to have an independent view of the quality of live subtitling in the UK, but also for respeakers and for those training to become live subtitlers. It is true that, as highlighted by Sky and the BBC in their responses, the future of live subtitling depends largely on the development of the appropriate technology. However, the current state of automatic speech recognition shows that human intervention is still going to be needed for many years. Research projects such as the EU-funded SAVAS are developing software that can create automatic subtitles without a respeaker, adding punctuation marks and colours for character identification, but this technology struggles when there is background noise, overlapping voices or spontaneous conversation. These challenges may be overcome in some years, but the software will still have to control high speech rates by editing the content without losing meaning, which at the moment is far from realistic. In other words, the professionals working in this field (whether as respeakers or as live editors) are just as important as the technology itself to enhance the quality of live subtitling. The data that will be made available following Ofcom’s consultation will be extremely useful for respeaking trainers and prospective respeakers to understand key aspects of their job, including how much editing must be done and when, how this affects latency, what type of errors occur and which ones must be corrected, etc. Many broadcasters and access service providers already have this information, but it is very important to have independently obtained data in the public domain that can be used to train professionals so that they can deliver a better service. As noted in many responses, though, these should be done in agreement with the broadcasters and service providers as far as methodologies and time-frames are concerned.

Ofcom's report asks respondents about the need to modify the existing guidance on subtitling. As noted in most responses, it does not seem practical at this stage to include specific figures that can impose undue constraints on broadcasters and access service providers. However, we now know more about live subtitling and its impact on the viewers than we did when the guidelines were drafted. The consultation document has been very effective at including the main research findings obtained so far in this field and how they affect viewers and providers. Some of this information should be included in the guidelines, which at the moment remain somewhat dated and include very little information about live subtitling.

Finally, the creation of an easily accessible one-stop-shop hub for complaints and information to provide an enhanced feedback mechanism, as suggested by the BBC, may prove very useful in many respects. This platform could enable a two-way communication system with the viewers. On the one hand, they could address their questions and queries to broadcasters and access service providers. As found in surveys such as the one conducted as part of the EU-funded DTV4ALL project, some of the main complaints about live subtitling are due to the viewers' unrealistic expectations of the current state of speech recognition technology and their lack of familiarity with live subtitling. Some access service providers often welcome deaf organisations in their premises to show them what is really involved in the process but it is difficult to reach a wide number of viewers. This platform would be an effective way to do this by including not only a response mechanism but also Q&A documents and other relevant information (such as the data about live subtitling requested by Ofcom) that can inform viewers and manage their expectations. Moreover, this platform could also be used to "address the viewers", in other words, to obtain information from them about their views on live subtitles, how latency and (lack of) accuracy affect their comprehension, etc., which, as noted by many respondents, is essential to enhance the quality of live subtitling.

In short, this one-stop-shop hub would give viewers a voice to express their concerns about live subtitling, provide them with information so that they know what can be expected and make the most of their interest by involving them in research that can help improve the quality of the service they receive.

Q1. Do consultees agree with the proposal to require broadcasters to measure and report every six months on the average speed of live subtitling in a variety of programmes, based on a sample of segments selected by Ofcom?

Q2. Do consultees consider that broadcasters should be asked to report separately on different types of live programming? If so, do they agree with the suggestions in paragraph 6.19, or would they suggest different categorisations, and if so, why?

Many respondents have rightly pointed out that subtitling speed is just one more element to be taken into account when looking at the quality of live subtitling. It largely depends on the speakers' speech rates and it is closely linked to other live subtitling aspects such as editing, latency and error correction. Yet, as noted by Channel 5, if analysed with a consistent and thorough methodology, it can lead to a research resource that might inform future improvements in subtitling quality.

First of all, it can provide very useful information for viewers with different types of hearing loss to know what programmes may be more or less comprehensible depending on the speed

of the subtitles. Respeakers and trainers will also find these data very useful to see how fast their subtitles are being displayed on the screen and to decide how much editing is needed in order to allow viewers to enjoy the images on the screen. It is true, as has been argued, that viewers do not usually complain about subtitling speed, but they do complain about editing. The data on subtitling speed could be used to inform some of the responses to these queries - for example, to justify edited subtitles displayed at 180 words per minute, which, if not edited, may have to be displayed at speeds over 200 words per minute.

In order to measure the speed of live subtitles, it will be necessary to agree on a consistent methodology focusing mainly on fully spoken excerpts (which is possible, as it has been done before) and to account for the differences between programmes and channels. If, as has been noted, the measurement shows that subtitles do not exceed 180 words per minute, it will then be possible to focus on the other two aspects that viewers have highlighted as priorities: latency and accuracy.

Q3. Do consultees consider that the guidance on subtitling speeds should be reviewed? Do consultees agree that, for the time being, it would not be appropriate to set a maximum target for the speed of live subtitling? If not, please explain why.

Ofcom's Code on Television Access Services states that subtitling speeds "should not normally exceed 160 to 180 words per minutes for pre-recorded programmes" and that, for live programmes, commissioning editors and producers should be aware that "dialogue which would require subtitles faster than 200 wpm would be difficult for many viewers to follow" (section A4.19, page 16). Setting a maximum target for the speed of live subtitles at this stage would probably not be a good idea, as it would constrain access service providers (and especially respeakers) without taking into account other aspects that are closely related to speed. However, as noted by UKCoD, it is very important that the Code reflects the latest knowledge about subtitling speeds, so that not only broadcasters and access service providers but also producers and editors can be familiar with it. Our research shows that most programmes have average speech rates of over 180 words per minute and many over 200 words per minute, which often leads to complaints from viewers with hearing loss. It is essential that editors and producers know the impact that fast dialogue (and fast subtitles) can have on the viewers' enjoyment of both subtitles and images. At the moment, the Code remains too succinct and, at least in this respect, it still considers subtitle users as readers rather than viewers.

Q4. Do consultees agree that it would not be appropriate at this stage to set a maximum target for latency? If not, please explain why.

Research has shown that latency is the viewers' main concern when it comes to live subtitling. It thus seems reasonable for Ofcom to propose that "broadcasters should be required to measure both the average latency of subtitling and the range of latencies, based on a number of short samples of programmes recorded off-air that we would select from news and other programmes" (section 6.22 of the consultation document). It is important to obtain quantitative data about the average latency of subtitles in different programmes but also qualitative data about specific peaks, why they are produced and the extent to which they can be fixed. Admittedly, increases in latency may sometimes be due to technical issues, but they

are also often caused by respeakers (for example when they correct minor errors that would be best left on the screen), which can be addressed and fixed.

At the moment, the Code states that “in live programmes, the aim should be to keep the inevitable delay in subtitle presentation to the minimum (no more than 3 seconds) consistent with accurate presentation of what is being said” (section A4.18, page 16). Unfortunately, the data obtained in recent studies shows that although there are some subtitles in specific programmes or specific moments that may have a 3-4-second delay, the current average latency is closer to 6-8 seconds. Given that the recommendation set by Ofcom of 3 seconds or less is hardly ever met, it may be useful to review the guidelines to include a more realistic figure. One option would be to include a figure (to be discussed and agreed by the different parties involved) for the high end of the range (for instance, “the aim should be to keep the inevitable delay in subtitle presentation under 8 seconds”) as is the case in the official Spanish guidelines published in 2012. Ideally, this should not be set as a constraint but rather as a more realistic target to work towards.

In short, given that latency is constantly identified as the main concern by the viewers, this issue seems too important to be tackled in the guidelines with a free-range approach and no mention of a ballpark figure or with a target of less than 3 seconds (as is the case in the current Code) that at the moment cannot realistically be met.

As noted in many responses, research is needed to ascertain the extent to which different types of latency affect comprehension, which could be done through the one-stop-shop hub proposed by the BBC as explained in the introduction to this response.

Q5. Do consultees agree with the proposal to require broadcasters to measure and report every six months on error rates, on the basis of excerpts selected by Ofcom from a range of programmes?

Ofcom’s proposal to obtain data about “both gross error rates and the number of more serious errors to be found in excerpts selected by Ofcom from a range of programmes” (section 6.26, page 30) seems like a good first step to tackle this crucial aspect of quality in live subtitling, especially if there is an agreement of what a gross or serious error is before the measurement is carried out. This could also be useful for respeakers and for the very important aspect of live corrections, which has great impact on latency. In other words, if there is an agreement on what a serious error is, respeakers could identify and correct these errors instead of mild errors, which would avoid unnecessary corrections (and unnecessary delays).

However, measuring only serious errors could lead to unreliable data. Respeakers often manage to avoid serious errors, but instead they may make minor (and standard) errors, especially omissions, which eventually decrease the quality of the subtitles below the required standard. These subtitles would not be picked out as problematic in the measurement proposed here and yet would be of substandard quality. This is why, as highlighted by NADP, NDCS and UKCoD, it is also crucial to conduct a more thorough analysis (whether or not using the NER model) that can account for the other types of errors and give a full picture of the accuracy of a given programme. The fact that broadcasters and access service providers have their own methods to measure accuracy bears witness to the efforts that have been made in the UK to improve live subtitling quality and will be very useful to help identify a robust methodology that can be used by Ofcom to measure this issue independently.

Needless to say, the quality of a set of live subtitles cannot be determined by accuracy rate alone, but there are now methodologies available to measure accuracy rates while also taking into account the other key aspects involved in live subtitling quality (latency, editing rate, speed, etc.). New tools are currently being developed to automatise part of this process, which will make the analysis less time-consuming and much more feasible, especially if it is only conducted for a random sample selected by Ofcom.

Q6. Do consultees have any views on the advantages and disadvantages of scrolling versus block subtitles for live-subtitled programmes? Taking account of both the advantages and disadvantages, which approach would consultees prefer, and why?

The research evidence gathered so far indicates that block subtitles are much easier to process and allow viewers to spend more time on the images than scrolling subtitles. This is in line with psycholinguistic research on reading patterns, which has shown that the absence of immediate context (that is to say, the absence of the word to the right of the one the viewers are reading) is one of the biggest obstacles a reader can face. This occurs in scrolling subtitles, which pose for the viewers the additional challenge of having the words displayed in an irregular manner and with the need to process images as well as subtitles. In short, used as they may be to reading scrolling subtitles in the UK, the viewers are being asked to perform a very complex and tiring task on a daily basis, and, as noted by Ofcom, “they may not always be aware [...] of how this may impact upon their viewing experience” (section 3.10, page 7). The current Code on Television Access Services refers to scrolling subtitles only once (section A4.15, page 16) but does not mention any of this evidence that has been included in the consultation document. Once again, it would be useful if the guidelines could be updated with the knowledge that has now been gathered about this issue.

Over the past years and in the light of the evidence gathered on this issue, countries such as Switzerland and France have replaced their scrolling subtitles for block subtitles and others such as Spain, which did not have a regular live subtitling output, decided to start their service with a block display.

Virtually every single response to Ofcom’s consultation document highlights the need to keep scrolling subtitles for live programmes and to provide block subtitles for all pre-recorded and late-delivered programmes, which would be an improvement, as the latter have traditionally been shown with scrolling subtitles. Another improvement would be to modify the output of the words displayed as part of the scrolling subtitles. At the moment, these words are displayed irregularly, sometimes one word at a time and other times in bursts of two or three words. This makes it extremely difficult for the viewers to predict how long it will take for the words to fill the lines in the subtitles. As a result, viewers spend much more time than necessary on the subtitles and miss a great deal of the visual content. A regular display of scrolling subtitles would help viewers predict when a line or two would be filled and to devote more time to the images without having to worry about missing information. As has been stressed for long, reading is about patterns, and scrolling subtitles (and especially irregular scrolling subtitles) are the worst possible enemies for this reading process to happen smoothly.

Moreover, given that latency is put forward in most responses as the main reason why scrolling subtitles are preferred to block subtitles for live programmes, it is worth looking at this issue in more detail. In countries where scrolling subtitles have been ruled out because of

the reading difficulties they cause, respeakers are being trained to produce block subtitles in a way that minimises latency and are now obtaining impressive results that are very close (if not equal) to the ones obtained by scrolling subtitles in the UK.

It would be useful to conduct research on the viewers' opinion and comprehension of different types of scrolling and block subtitles, for which once again the one-stop-shop hub proposed by the BBC would be an ideal platform.

Q7. What are the factors that might facilitate or hinder the insertion of a delay in live transmissions sufficient to improve the quality of subtitling? Ofcom would particularly welcome the views of broadcasters on this question.

This is mainly a matter for broadcasters to discuss and consider and they have provided powerful reasons against the introduction of this delay. Given the difficulties involved in the process if it is done centrally, would it be possible for the viewers to decide at their end whether or not they want to have the antenna delay?

Conclusion

“The quality of live subtitling” is a welcome and in many ways unprecedented contribution by Ofcom to the field of live subtitling. Bringing together input and expertise from broadcasters, access service providers, viewers and academics, it helps to identify the key issues involved in the production of live subtitles and it points to different ways in which their quality can be enhanced. However, this document can only be really effective if it is considered as a starting point to review the *Code on Television Access Services* (which is now obsolete with regard to the current knowledge and developments in this field) and to conduct independent measurements of the key issues about live subtitles that concern viewers.

The one-stop-shop hub suggested by the BBC would be a welcome initiative to provide viewers with information about the quality of live subtitles, to give them a voice to express their concerns and to involve them in research that can help improve the quality of the service they receive.