

# Captioning and semiotic analysis in Digital Television

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**Abstract.** In the United Kingdom closed captioning provides a limited bandwidth for verbatim text and very basic background information for the viewer. This means that the information and atmosphere contained in music, sound effects, paralanguage, music, and silence periods are lost to deaf viewers.

With the arrival of digital television, I have been exploring how emotions can be illustrated by implementing an enhanced display to deaf viewers, utilising the increased bandwidth available with this new digital media.

## 1. Background

Closed captioning was first made available to most of the UK viewing public by the introduction of Teletext in the late 1970s. The section of the famous "888" page allowed for captions to be seen by those viewers who selected it.

With the arrival of digital satellite, cable and now FreeView terrestrial digital television closed captioning is available to over 70% of the UK population (OfCom, 2004)

The closed caption system available at present utilises a simple text-based format, with a modified character set built into the decoder chip. Although it is true that there have been several modifications over the analogue Teletext system, the basic system is unchanged. The current system uses a single, mono-spaced font, with a single font size (both upper and lower case). It also uses a small set of 4 font colors, and a black background.

The addition of extra characters such as the # to indicate music and \* narrative, were first seen in Teletext in the early 1990s.

Many of the programmes shown on Digital television are from television archives and still carry captions produced for the analogue era. The main subtitling/caption writes for British Television are the ITFC, BBC Subtitling and Sky Subtitling.

With the total switch over from analogue to digital planned for 2009/10 (Hansard,13/09/2005), it is time to change the way captioning is used. The new digital standards allow for many more colours, variably-spaced fonts and different background or no backgrounds at all.

Even so, captioning still remains a text based format, the use of symbols and other visual clues often used in internet and computer programmes are seldom used. In my research, I have been investigating how much deafened people feel they are missing even with captions to guide them whilst watching television programmes.

Captioning has its roots in the cinema captioning which accompanied foreign films shown without dubbed voices. This is why the Teletext captioning was offering near verbatim text of all the dialogue, even though it obscured the picture and was often half a minute out of synchronization. In my questionnaire which surveys the views of 79 deaf and hard of hearing viewers in the UK, the majority requested that captions should offer more than simply dialogue. They wanted better descriptions, and clearer explanation of how speech was delivered not simply what was said. Many also felt that they were missing a lot of background information which hearing viewers were given.

The questionnaire had twenty multiple choice questions plus 3 comment boxes for the participants to give their own viewpoints. In addition to the 79, who returned their questionnaires, 10 hearing viewers also filled in the survey. The comment boxes elicited views such as

“I want to feel what is going on, not, just to read the report “ “Music is displayed like written prose, without knowing the tempo and depth of

the music it is often meaningless and confusing.” “There is no build up of suspense in thrillers, things just happen”

There are several problems with using just text-based captioning. Captioning is reporting human speech, words are only a part of the overall picture. The term “Paralanguage”, (the non-word part of speech), is a much larger part of the communication process. Margaret Deuchar in her analysis of sign based language systems (1984) noted that when language is broken down into semantic interpretation, language is made of over 50% body language, 40% paralanguage and only around 10% centres on the words used. So paralanguage is 4 times used more than just words, and body language is over half of the total interpretation. Often captions obscure the body language of the characters in television programming, especially when seen on the standard 4:3 format (as opposed to widescreen).

Music plays an increasingly important role on television. The theme music often sets the tone of the programme. The incidental music played to heighten or lower tension can also be used to signify other emotional responses such as warmth, coolness, romance and solitude. Sound and background music is also used for scene setting and to focus the viewer’s attention on parts of the picture being viewed.

There are at present plenty of words already in captioning and adding more would simply confuse the viewer and obscure even more of the viewable area. A deaf or hard of hearing person depends on their visual senses as the main methods of receiving the messages that the various signs on the screen are sending.

The solution might be the use of some graphical representations to be added using simple icons. This is not a new idea both the ancient Greeks and later the Romans used this technique by displaying symbols above the stage, or with actors parading with signs atop long poles so the audience could understand what was happening. For example a storm may be represented by graphical representations of waves and winds being moved across the back of the stage and around the arena during the play. This method was often used at both the Rose and Globe theatres when staging “The Tempest”

The increased bandwidth offered by digital television coupled with the increasingly availability of widescreen television (16@:9) formats could accommodate such addition graphics without obscuring the viewable picture further.

Graphics have been used for the weather forecast on television since its introduction in the 1950s. The latest format used by the BBC depends largely on graphics to shown how the rain might actually be like rather than a plain tow dimensional symbol of a rain cloud.

I have been exploring this further by the used of a specially recorded DVD and the Windows Media Viewer on a lap top. The advantage of using a DVD over regular computer based formats is that it can easily be watched on a conventional television to provide greater realism.

The next stage of the research will use this DVD format to illustrate how simple emotions could be applied to a short piece of television drama. These emotions are: Happy, sad, anger, menace/fear and silence. The piece has both dialogue and music, and this will be shown with captions and the sound on, when viewed by deafened people and the sound turned off when viewed by hearing people.

.Amongst the responses which will be measured will be the following:

How much the graphics helped to convey heightened sense of themes, depth, and feelings.

Was the use of graphics more of a distraction than a source of information?

How the results compared between hearing and deafened people.

Although Deafened people cannot hear sound they can hear it. Sound is vibration, and the insensitivity of sound can be measure. The volume and depth of sound is important and how this can be utilised is another area of investigation.

Conclusions:

Initial responses have indicated that the deaf and hard of hearing populations both require and want a better system than at present. The

ongoing experiments with graphical and well as text based captioning will hopefully provide some answers.

A fuller paper on this subject is available please e-mail me : [D.Boksan-Cullen@brighton.ac.uk](mailto:D.Boksan-Cullen@brighton.ac.uk)

#### References

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