

Ryoko Sasamoto and Stephen Doherty

1. Introduction

As anyone who has experienced Japanese TV programmes would agree: Japanese TV programmes are filled with statically and dynamically positioned textual inserts that appear across many genres and broadcasters. In fact, these textual inserts are so prevalent that there are even popular discussion threads in online asking about TV before such captioning, and if there are any programmes that remain uncaptioned.

Such textual props are deployed as part of editorial tools in many genres of TV and by many broadcasters (Sasamoto 2014; Shitara 2011; O'Hagan 2010; Shiota 2003). Unlike the early usage of smaller captions as a tool to provide breaking news or supplementary information within programmes, these textual props are often dynamically positioned with various fonts and colours, combined with images, animations, and picture-in-picture windows – all in all, a rich multimodal representation of additional information for TV viewers. As O'Hagan (2010) summarises: different terminologies have also been employed to capture the different types of intralingual captions.

Intralingual (same language) subtitles have traditionally been used as an aid for individuals with hearing impairments (Subtitles for Deaf and Hard of hearing). SDH are typically closed captions, where the viewer can choose whether to have them displayed or not. In contrast, textual props seen on Japanese TV are open, therefore, viewers cannot choose to view the programme with or without them. Also, unlike SDH where nearly all utterances and sounds in the dialogue and narration are displayed, impact captions display only selective parts of the current scene. In other words, the function and envisaged target audience differ between subtitles and textual props on Japanese TV and it is therefore misleading to use the term *subtitle*. Coupled with this is the fact that subtitles traditionally appear at the bottom of the screen area, hence *sub*, whereas impact captions appear around all borders of the screen as well as in the centre and are non-static, i.e., without spatial or temporal restrictions.

The most common term used in Japan for these captions is *telop*, which came from Television Opaque Projector, a device used to transmit separately prepared text or graphics directly onto the TV screen without the use of an additional camera. In addition to these terms, another commonly used term for subtitles in Japan is *Jimaku-Super* (subtitle-superimpose). This is a combination of the term most-commonly associated with texts on screen, *subtitle*, and a cinematic technical term *superimpose*. Both *telop* and *Jimaku-Super* are both specific to Japan, and *telop* is also

limited to textual inserts on TV. Further to this, Western audiences are unfamiliar with these terms and their origins, so comprehension and consistency is difficult, both in the literature and in the industry.

Related to wider discussion of terminology, Pérez-González (2012, p. 14), an established audio-visual translation scholar, employs the term *authorial titling* in his analysis of textual inserts on the BBC's *Sherlock* series as a form of transformative subtitling (a series we return to below). On the one hand, the use of textual props in *Sherlock* does have some similarities with caption uses on Japanese, as they both involve use of same-language textual prop. However, on the other hand, as we will see below, authorial titling in *Sherlock* is a diegetic part of the narrative while Japanese captions are added as an extra editorial prop rather than integrated into the plot (c.f. Sasamoto 2014 and O'Hagan 2010). For this reason, the term *authorial titling* is not suitable for the caption use of interest in the current paper.

In attempting to resolve this terminological issue, we argue for the term caption, given its ability to account for the multimodal and dynamic nature of the textual inserts being used in many way, shapes, and forms. Yet, *caption* alone is quite a generic term and can be used to refer to legend under images and figures, explanation for images, and even to subtitles themselves. We therefore draw upon Park's (2008) term *impact caption* as it best describes this novel use of multimodal and dynamic textual inserts, and captures the editorial intention of making an *impact*. This term also does not limit itself to particular genre or medium, which is apt given the growing diversity of genres making use of such captioning methods.

Having originally developed in Japan, the use of impact captions is now widespread across Asia, especially in Korea and China. It has even begun to influence Western counterparts (e.g. the BBC) as a tool for enhancing the viewer experience of everyday TV. However, there has been sparse research conducted on impact captions on TV and the media industry continues to use such captions in an ad hoc manner as their Asian counterparts have been doing for several decades now. A consequence of this lack of empirical research is the absence of guidelines for best practice or common usage and a real danger for misuse and potential damage.

This paper captures the background and current state of impact captioning on Japanese TV, their ad hoc usage, and consequent effects thereof. As we will show in Sections 4 and 5, impact captions are being used across different genres and within a growing number of everyday programming. As such, it would be beneficial for both creators and viewers to know how impact captions can best be employed in these different contexts and for a growing diversity of global viewership, e.g., accessibility, viewers from other languages, elderly viewers, and language learners. In doing so, we aim to pave the way for optimal impact captioning in these scenarios, including effective captioning

in news and entertainment programming, and early warning systems and emergency communications.

2. Impact Caption in Entertainment Programmes

As previously mentioned, the use of impact caption is so prevalent, and arguably so popular, in Japanese entertainment programmes that the screen is often filled with impact captions and images - see Figure 1:

[Figure 1]

Figure 1: A typical impact caption use in an entertainment programme (London Hearts 2012)

Figure 1 is a typical example of entertainment programming on Japanese TV, where the screen contains a number of impact captions showing various types of content. This popular programme consists of a number of smaller programme sections with different presenters. In the top right corner, we can see the section title and opposite, in the top left corner, we can see the *current topic* of discussion in this particular section. The impact captions that appear on top of screen are often used to provide structural information about the programme and its sections, and are useful for viewers who are in a habit of 'zapping' from one programme to another, or are just watching for a limited time. Such captions often linger on the screen for the entire duration of the section. The impact caption at the bottom of the screen usually pops up as the programme progresses, and often, but not always, displays a *verbatim* of an utterance produced by a participant within the programme or a summary of the participant's discourse. In this example, the impact caption is a literal representation of the female panellist's (left) utterance. We can see that the impact caption is used in conjunction with images – in the bottom left corner, an animated avatar representing the host of the programme, and in the bottom right corner, an image of the actress who is not actually present in the programme but is being mentioned in this utterance. The use of images and avatars in this way is not unusual, and we can often see images of studio panellists, such as the face of a studio panellist appearing within the frame just below the caption in top right corner and in synchronisation with what is happening in the main screen - in Figure 2:

[Figure 2]

Figure 2: Use of a wipe image in entertainment programmes (*Ibid.*)

This kind of image display is called *wipe* and is a common technique used in entertainment programmes to show the reaction of panellists, who are often celebrities, to the viewers watching at home, so that they can see and also react to the panellists' reactions. This technique typically adds humour and excitement to the viewers of the show, especially where celebrity panellists are used in the frame.

3. Impact Caption in the News

As introduced above, the usage of impact captioning is not limited to the entertainment genre. More recently, other similar and dissimilar genres have also incorporated them into their everyday content, most especially in news programmes.

In Example 1 in Figure 3, we can see the conventional use of captions in this genre of programming. At the top of the screen, we can see the logo of the broadcaster, and at the bottom of the screen, we can see the summary of the news story the newsreader is currently presenting. Example 2 shows the utterance that is being captioned – it is often used when utterances are made by non-professional speakers in order to improve comprehension and authenticity, or to highlight and emphasise statements. Again, on the top right, we can see the summary of the news story and the programme title. Lastly, Example 3 demonstrates dynamic positioning of captions to provide further explanation of the image being shown. Once again, we can see the news story summary on the top right. Underneath this, vertical arrows are inserted to show the direction from Tokyo to clarify the picture being shown.

[Figure 3.1]

Figure 3.1: Conventional use of caption in news programmes (News Live 2013)

[Figure 3.2]

Figure 3.2: Compensatory use of captions (News Live 2013)

[Figure 3.3]

Figure 3.3: Dynamic positioning of captions and image (News Live 2013)

Impact captions are also used in news programmes to control the flow or transition of the contents. Through Figures 4.1 to 4.4, we can see how the title of this particular news story shoots out of the

news title list and then becomes settled on the next scene – at the position conventionally used for titles or summaries.

[Figure 4.1]

Figure 4.1: Title movement (News Live 2013)

[Figure 4.2]

Figure 4.2: Title movement (News Live 2013)

[Figure 4.3]

Figure 4.3: Title movement (News Live 2013)

[Figure 4.4]

Figure 4.4: New Scene with the news title on top right (News Live 2013)

As we can see in above examples, while impact captioning may not be as aggressively employed in news programmes as it is used in entertainment programming, its use, especially for factual content, may influence viewers in their interpretation and comprehension, especially those relying on impact captions to compensate for impaired hearing, limited cognitive processing, limited language proficiencies and in busy everyday scenarios.

Broadcasters have also started to realise the importance of caption uses in various scenarios other than entertainment programmes. For example, in response to Japan's need for more effective emergency warning systems after the Great East Japan Earthquake and Tsunami of 2011, broadcasters have started to modify the linguistic and graphical presentation of emergency warnings on TV. Figure 5 provides an example of this redesign on NHK, the public broadcaster in Japan, revealed at a press conference given by Kenichi Ishida, NHK's Executive Director-General of Broadcasting, in February 2013. According to NHK, their aim was to achieve intuitive and simple messaging by using short expressions and hiragana¹, which were used with simple colour combinations to ease reading.

[Figure 5]

Figure 5: NHK's new guideline for crisis communication design (NHK 2013)

¹ A more basic form of the larger Japanese syllabary that also includes kanji, the more complex logographs adopted into Japanese from traditional Chinese characters.

While this move certainly shows the broadcaster's effort towards more effective warning systems, it is not entirely clear why these modifications were made, given the absence of empirical evidence as noted above. Figure 5 shows how the screen is still filled with an excessive amount of written information with details regarding locations, estimated time of arrival, and the current size of the tsunami. While all these pieces of information are crucial, we ask: *is it truly necessary to have all this in one screen, and how do viewers, especially those at risk, process this information?*

As Nakajima *et al.* (1990) report, focusing on caption contents indeed alters viewers' memory and recall ability, so great care must be taken in presenting critical information, where evidence-based guidelines should be developed and adhered to. Similarly, as we have seen from the previous examples of entertainment and news programmes, the top-right position is often used for the programme or section titles. However, such norms not adhered to in emergency warnings such as in Figure 5 above. In other words, the top-right is not where impact captions carrying immediate significance are typically placed. This position is typically used to provide background and supplementary information to the viewer, yet due to the paucity of empirical support, it is difficult to come to any generalizable conclusions for optimal use.

4. Impact Caption in Drama

In addition to the genres of news and entertainment, broadcasters of dramas have recently started to incorporate impact captioning in order to show characters' inner thought processes and to share narrative or additional extra-narrative information with their viewers.

Figure 6.1 is a screenshot from the contemporary BBC drama *Sherlock* (2012). In this scene, we can see the impact captions are used to display the observation Sherlock is making on the appearance of Dr. Watson, who we see in the frame from the perspective of Sherlock's own eyes, thereby allowing us to be directly part of Sherlock's famous process of deductive logic.

[Figure 6.1]

Figure 6.1: Impact caption displaying Sherlock's observation of Dr. Watson's face (*Sherlock* 2012)

[Figure 6.2]

Figure 6.2: Impact caption displaying the smartphone search Sherlock is conducting (*Sherlock* 2010)

In Figure 6.2, also from *Sherlock* (2010) we can see impact captions being used to display what Sherlock can see on his smart phone - we are given the opportunity to see the stimulus from his perspective. By showing this directly on our screen, the TV producer can supply information to viewers that they could not otherwise access, which results in viewers coming closer to the characters in question by walking, as a form of telepresence, in their shoes.

So far, we have seen how impact captions are deployed across different genres and for a variety of functions. The question remains as to how the impact captions influence viewers' interpretations and what effects they have on viewer experience. Before turning to these questions, we shall now explore the background studies of impact captions vis-à-vis viewer experience.

5. Development and Prevalence of Impact Captioning in Japan

First of all, Kato describes contemporary Japanese TV as a “rapid verbal exchange with no sonic gap left unfilled and the screen filled with text”, he also describes, “the advance of technology, where both verbal and non-verbal sound becomes talkative and the screen is filled with both visual and linguistic information to the maximum” (2012, ch. 2, sec1, para 1, own translation).

Prior to this, Shitara (2011) conducted a quantitative analysis of programmes in NHK's archives, the main Japanese public broadcaster, and reports on the rapidly changing face of impact captioning since the 1960s, where Figure 6 shows how the use of impact captioning has increased since then:

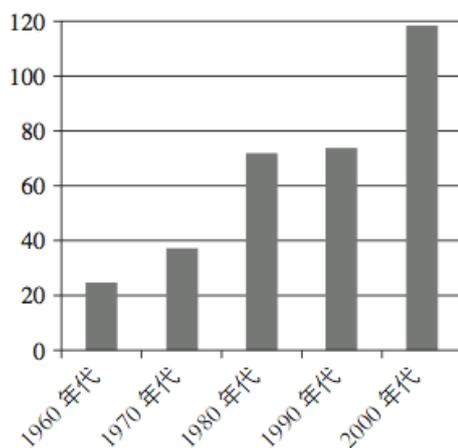


Figure 7: The number of characters per minute per decade from 1960 to 2000 (ibid., p. 3)

From this, Shitara (ibid., p. 4-6) reports that, in the 1960s, very few captions were used and when the function was mostly as a form of explanatory text about the programme itself, i.e., to inform the reader with little and concise chunks of relevant information. In the 1970s, captions moved from this to being used mainly for referential purposes such as introducing participants and song lyrics. The 1980s marked the beginning of captions being deployed with a unique programme-specific flavour,

and in the 1990s, with more advanced televisual technologies, we saw more stylish presentations with a growing diversity of colours and elaborate designs, which were the foundation for the rich multimodal impact captions we saw in earlier examples 1 through 4. Lastly, Shiota (2003, p. 6) reports a dramatic increase in caption usage since in the 2000s with more detailed and elaborate staging that aimed to create a feeling of 'being there'.

Shitara (2011) goes on to argue that the development of impact captioning was further facilitated by technological advances, which enabled a higher frequency of captions to be presented as part of staging and creating the feeling of synchronicity. Shitara (*ibid.*) argues that for viewers these written stimuli work as a 'hook' to draw in their attention and encourage continuous viewing. Despite this continually growing prevalence across different genres, there appear to be rather different verdicts on the resultant effects, with most reports looking favourably upon impact captions which we will now discover.

Kimura *et al.* (2000) report on a survey conducted with 183 viewers under the age of thirty. Their findings show that 92% of their sample is aware of the use of impact captions to create a special impact for viewers. Coupled with this, 85% of their participants felt these captions were necessary because they add entertainment value and also assist comprehension of the programme content.

Following this, Shitara (2008) conducted a survey with a larger sample of 702 participants (567 students and 135 adults) and reports that 73% of the student sample acknowledged that they often read the contents of captions while only 33% of adult respondents gave the same answer. When asked for their opinion of whether or not impact captions were necessary, an overwhelming 95% of students answered that they were necessary, while just over half (56%) of the adult participants stated the same. Other industry findings support these results and have shown that lighter usage of impact captions leads to lower viewing rates (e.g. 31st January 2005, Asahi Shimbun). This suggests that the younger generation of viewers appears to view impact captions more favourably, and perhaps that they have become more accustomed to them given they have been exposed to impact captions from their early TV viewing experiences, whereas older adults would have watched TV prior to widespread usage of impact captions taking hold.

In contrast, other scholars argue that the excessive use of impact captions has a risk of a 'dumbing down' effect (Sakamoto 1999), and the potential to antagonise viewers by imposing a particular and editorialised interpretation upon them (Shiota 2003). While it may be argued to be a positive application of impact captioning, no empirical evidence currently exists that shows such captioning promotes easier comprehension, e.g., especially for elderly viewers. To support this, we note how a report by Mitsubishi UFJ Research & Consulting (2011) shows that 35% of viewers with visual and/or hearing impairments were not satisfied with the role of captions in entertainment

programmes as an aid to promote comprehension. In fact, it clearly reports the strong dissatisfaction expressed by viewers with visual and/or hearing impairments as their traditional SDH subtitles were being obscured by impact captions placed over them, and in a distracting manner all over the screen. As with any other technologies, either automated or user-intensive, the use of written props is not entirely free from misuse and human error, which we will now outline in terms of the more significant societal and ethical issues posed by impact captioning.

6. Open Issues of Impact Captioning

As described above, the use of impact captions, despite its popularity, can have a range of negative effects. Errors in impact captioning are common and can lead to much more significant consequences. Figure 8 shows a case of a technical glitch in captioning— in this case, a delay of only several milliseconds. Here the impact caption appeared too early, and instead of viewing a picture of the man being referred to in the impact caption, the viewer reads that a cat with a university lecturer’s name, whose expertise in earthquake prediction study. The fact that the earthquake prediction study that the lecturer conducts involves measuring abnormal behaviour of animals and ion strength also causes accidental humour.

[Figure 8]

Figure 8: An example of timing error with resulting incorrect caption (Morning Bird 2011)

While this kind of ‘glitch’ could be excused as an accidental humour in some cases, a lax approach to captioning can easily lead to more serious incidents. For example, on 16th February 2012, a mock-up impact caption used for training appeared accidentally on an NHK morning programme. The caption stated that a professor from Ehime University was caught stealing. There was a formal complaint made from Ehime University against NHK, and NHK had to issue a formal apology to the university². Similarly, on 22nd September 2011, dummy captions created by a captioning contractor appeared by mistake on P-Can Telebi on Tokai TV, a commercial Japanese broadcaster. The captions in question were shown during a section wherein rice was being given away as a part of a humanitarian aid intervention from the Iwate Prefecture³.

[Figure 9]

Figure 9: Caption error with serious consequences (P-Can Telebi 2011)

² http://www.bpo.gr.jp/?p=694#h_01

³ <http://www.bpo.gr.jp/?p=3737>

The impact captions read: “contaminated rice - Mr Cesium”, or more colloquially, “dodgy rice – Mr Cesium”. This human error was particularly serious as this happened during the aftermath of the Great East Japan Earthquake and Tsunami, when there had already been serious damage and mass confusion caused by harmful rumours about agricultural products from the area, which in many cases were wholly untrue. As a result of this mishap: the programme was taken off the air, a number of sponsors of the broadcaster cancelled their sponsorship, the production section was disbanded, and the broadcaster itself received a formal warning by the Japanese Commercial Broadcasters Association. All of this is in addition to the damage caused to viewers themselves and to the rice manufacturer.

As is becoming evident from these examples (of which there are many more), cases that involve the deliberate or accidental misuse of captions highlight the danger of such unregulated and unguided impact captioning in the current ad hoc and unsecured manner. As O’Hagan (2013) points out, there is an interesting relationship between ‘vulnerability’ of subtitling and impact captioning, where such content can easily be error prone, liable to editorialisation, and purposefully manipulative. O’Hagan draws upon Díaz Cintas and Remael (2007) who describe subtitles as ‘vulnerable translation’ as they co-exist with the source language sound track and therefore need to withstand scrutiny from the audience who may also understand the source language.

Cases such as the above, caused by the misuse of impact captions are like an extension of vulnerable translation but in an intralingual scenario. Rather than subtitles being vulnerable, impact captions make viewers vulnerable to the media producer’s direct and indirect manipulation or unintended technical errors, especially in cases where the viewer does not have the ability to understand the sound track and/or the utterances being made, e.g. the elderly and those with hearing and cognitive processing impairments (O’Hagan 2013). As a result, facts, opinions, and fiction can all very easily become blurred and distorted due to the wide circulation of online media and social networks where other users can add further changes and interpretations (e.g. the fan subtitling movement described by O’Hagan 2009). Once again, this highlights the need for further empirical research on how impact captions can be used effectively and sensitively.

7. Current Insights into Impact Captioning

Thus far, we have seen how impact captions are deployed across different genres, their related benefits, and the problems that come with the widespread casual attitude towards captioning in the industry. In this section, we focus on how impact captioning is operationalised in terms of cognitive and affective processing.

The prevalence of impact captions on Japanese TV has drawn some scholarly attention to this area in recent years, where most have taken a taxonomic approach and focused on the description of different impact captions and their uses. Shiota (2003) takes a relevance theoretic approach and analyses the use of impact captions as a special form of translation. She presents three categories of impact captions uses:

- (1) informative;
- (2) repetitive;
- (3) interpretive.

Kimura *et al.* (2000) also take a taxonomic approach and present additional functions and forms of impact captioning. They assign three functional categories:

- (1) verbatim of a dialogue;
- (2) facilitating comprehension;
- (3) scene change management.

Each function has subcategories of text types such as utterances, sound effects, titles, discourse connectives, etc. As for the taxonomy of forms, they categorise impact caption usage depending on the typeface, orthographical choice, special symbols, animation, etc.

While there are not many studies that attempt to explain the role of impact captions in the cognitive interpretation process, there appears to be an agreement amongst those who tackle the issue that impact captioning essentially involves a mediator that comes between the speaker the viewer (e.g. O'Hagan 2010; Shiota 2003). The mediator, namely the TV producers or broadcaster, aims to take influence or more control of the viewers' cognitive processing for an enhanced viewing experience – which may or may not be in the viewers' best interests.

Illustrating this usage, O'Hagan (2010) carries out a case study with the game show named *Hole in the Wall*. The programme was launched by Fuji TV in July 2006 and has since been exported to other countries. This programme was designed to highlight humour through action (a human form of the popular puzzle video game Tetris) and conversations between the host and contestants. O'Hagan (2010, p. 85) argues that impact captions play a role in "framing humour", which "demonstrates an interpretive inclination and also a tendency of dramatizing the trivial". In some cases, the impact captions repeat part of utterances and/or other information that are so trivial that the viewers would not have paid any special attention to them had the impact captions not been displayed and drawn in their attention. In other cases, it helps the producer to provide a common ground for the viewer where the mediator can emphasise a humorous aspect of a particular scene - O'Hagan (*ibid.*) links this use of impact captioning with other methods used in TV programmes such as canned laughter.

O'Hagan's (ibid.) case study also provides the first comprehensive analysis of the manner in which impact captions are deployed, moving beyond a limited typology of the source of captions that came before. The study leads to further questions as to how exactly impact captions "frame humour" and how such concepts can be clearly defined and measured. Sasamoto (2014) and Sasamoto and Doherty (2013) develop upon this by taking an interdisciplinary approach comprising of a meeting point between relevance theory and cognitive psychology in order to analyse the role of impact captions in terms of a highlighting device to manipulate viewers interpretation process, where both theory and evidence are key components to their mixed-methods research design. Their analysis in terms of a "highlighting device" has an advantage of being able to provide an account within a cognitively grounded theory of human communication, with empirical support using eye tracking and psychometrics (from Doherty et al. 2010; Doherty and O'Brien 2014), rather than treating it as a special form of theorised media communication (ibid.).

More generally, Sperber and Wilson (1986, 1995) have established a cognitively grounded theory of human communication, relevance theory, that is based on a general statement about human cognition, i.e., that human cognition tends to be geared to the maximisation of relevance (Sperber and Wilson 1995, p. 260). Based on this general statement about human cognition, Sperber and Wilson propose a communicative principle of relevance which postulates every act of ostensive communication communicates a presumption of its own optimal relevance (ibid., p. 260). In other words, by requesting a viewer's (or hearer's) attention, the viewer is entitled to assume that the information the speaker is offering will be worth processing, or, *relevant*. Relevance is therefore defined as a relationship between processing effort and the associated contextual effects.

In this way, the use of impact caption is ostensive in that TV producers and broadcasters are trying to put down as many markers as they can draw the viewers' attention, which in itself requires extra processing effort on the part of the viewer. Viewers cannot but process the imposed extra stimuli in addition to processing what is already happening in the programme. Thus, from a cognitive relevance point of view, we pose the question: *what reward do viewers attain by processing impact captions?* As we have seen, TV producers use these impact captions in order to emphasise and highlight chosen elements of a programme to result in a specific impact on viewers. Often, the emphasised part is the source of comical effect (c.f. the 'framing humour' analysis by O'Hagan [2010]), and in other cases, it is a particular interpretation that the producers want to endorse, enforce, and/or reinforce.

These forms of highlighting are not wholly novel - consider Example A, where all three utterances communicate more or less the same contents but each has a different stylistic interpretation:

Example A:

1. Alfie drew a lion.
2. It is a lion that Alfie drew.
3. What Alfie drew is a lion.

While all three utterances communicate the fact that Alfie drew a lion, each utterance emphasises a different constituent. In traditional literature on linguistics, in order to account for the intuition about the highlighting in utterances, distinctions such as theme/rheme, given/new, or the notion of 'information structure' (Halliday 1967, 1968) were introduced. However, as both Sperber and Wilson (1986/1995) and Wilson and Wharton (2006) later show, we can account for these stylistic effects without relying on such artificial distinctions as such highlighting is the result of the speaker exploiting structural features of an utterance in order to communicate at a minimum processing cost. In other words, in order to achieve an intended interpretation at a minimum justifiable cost, the speaker takes advantage of whatever device is available.

Applying this notion of highlighting devices to the use of impact captions, Sasamoto (2014) and Sasamoto and Doherty (2013) argue that the mediator uses these captions as a highlighting device to draw the viewers' attention to chosen elements for a specified purpose. Cognitive and communicative principles of relevance predict that use of impact captions contributes to relevance by raising cognitive and affective mutuality, i.e., shared interpretation and affective response, (as we saw in Sherlock in Examples 5.1 and 5.2). This ensures that the viewer will pay attention to whatever TV producers want them to, which will result in viewers accessing contextual assumptions regarding the highlighted elements. In other words, the purpose of impact captioning is to manipulate the interpretation process by urging viewers to search for relevance in the way that suits the producer.

Let us now see in further detail how this relevance theoretic analysis enables us to account for impact captioning - recall Figure 1.

[Figure 1]

Figure 1: A typical impact caption use in an entertainment programme (London Hearts 2012)

In Figure 1, the impact caption at the bottom of the screen highlights an utterance which the host of this programme made as a response to the female panellist, when she declared (possibly one-sided) rivalry between her panellist (right) and the actress in the image next to the caption. While the actress shown in the image is extremely popular in recent times, the female panellist is not as high

profile. This caption therefore highlights the host's affective response to the female panellist's somewhat cheeky declaration. By captioning this particular utterance, the TV producer can bring the viewers to the same page as the other characters in the TV programme, i.e., to the surprised reaction to such a bold (and unlikely) rivalry declaration by the panellist, so that viewers would also react in the same way as the other studio guests who seemingly found this utterance particularly surprising and funny.

While impact captions are often used to represent verbatim utterances produced in all genres of programmes, there are also cases where they are added to show an interpretation of other characters' thought processes - see Figure 10:

[Figure 10]

Figure 10: Impact caption use to highlight a possible interpretation (Anotoki Kami Ga Orita 2013)

Figure 10 is a scene from a documentary that features a baseball match to commemorate a baseball player who had recently died. Here, the caption at the bottom of the screen states: "[he] can't contain the feelings for this late friend". This is not a verbatim of any utterance – in fact, there are no utterances or narration at any point in these captioned scenes. This is what Shiota (2003) labels as 'interpretive' caption, i.e., a textual representation of an interpretation of the character's thought. By highlighting this particular interpretation, TV producers can ensure that viewers would interpret the programme in the way that they intended, e.g., to create a dramatic ending as in the previous example. In other words, by showing this particular interpretation, the TV producer can ensure viewers access the same assumption that would then give rise to a feeling of sadness, thus ensuring affective mutuality with the character on screen – all the while the contents of the caption may or may not be true.

Finally, in some cases, impact captions do not just highlight the contents of the programme, but also actually provide an explicit direction to them. In Figure 11, we can see the impact caption in the middle of the screen that states: "by the way". Here, the TV producers are segmenting and arranging parts of the programme by adding directives such as these so that they can visibly control the flow of the programme. By highlighting such directives, the TV producer can ensure that viewers would know what to expect and prepare for the next part of the programme (i.e., a form of teaser or anticipation). The highlighted directive also provides viewers with access to such a set of assumptions but this time not via a catchphrase but by explicitly showing how the programme will

progress onwards. Such impact captions have developed from the traditional, and now rare, use of intertitles as found in the era of silent movies (see Gaudreault and Barnard 2013).

[Figure 11]

Figure 11: Highlighting meta-directives (Himitsu no Kenmin Show 2014)

8. Focusing on Viewers

In moving away from the analysis of impact captions and their contents, Nakajima *et al.* (1990) conducted eye-tracking experiments on the viewer reception thereof, and report that as soon as such captions appear on screen, participants fixate upon them. They also carried out a recall test, which demonstrates that the content of these captions affects viewers' memory, in that viewers recall more of the thematic and detailed content when captions are used. Similarly, Suzuki *et al.* (1997) show how the use of captions promote comprehension, yet find that there is also a danger that captions could divert viewers' attention from other aspects of the programme, i.e., visual and aural information.

More recently, Sasamoto and Doherty (2013) conducted an eye-tracking study of impact captioning and its effects on viewers of entertainment content. They report that, as hypothesised by relevance theory above, viewers attended to impact captions regardless of their relatedness to the programme content. In addition, it was found that there exists a strong preference for such impact captioning, where viewers felt they added humour to and eased the comprehension of entertainment programmes. These findings add empirical support to the cognitive and communicative principles of relevance as discussed above, i.e., if someone ostensibly provides a communicative stimulus, we cannot but process it, as such an ostensive behaviour entitles us to believe whatever the speaker is trying to communicate is worth our attention. Lastly, they (*ibid.*) find the overall viewer satisfaction with programmes employing impact captions was high, yet the use of dynamic impact captions that were perceived to be unrelated to the programme content, resulted in annoyance being reported. That is to say that this dissatisfaction was due to the expense of cognitive processing on the part of the viewer, with no tangible result being received.

9. Concluding Remarks: Impact Captioning and Societal Implications

This paper has reported on the background and current state of impact captioning in various genres, contexts, and interdisciplinary studies. We have seen how impact captions affect human cognition by mediating and manipulating how viewers attend to the content of these impact captions and

make inferences based on the contextual information. While benefits to using captions have been shown in increased comprehension and entertainment, great potential exists for biased broadcasting, limiting free interpretation, and even antagonising viewers. Dangers are more apparent for viewers from deaf and hard of hearing populations who rely on textual inserts such as captions and subtitles for comprehension and enjoyment. Such viewers report difficulties in processing such rich and dynamic content that often blocks viewers from seeing critical information and the underlying programme. At the same time, we also note the popularity of impact captions, especially with younger viewers, a trend that appears to be spreading into Western media, in traditional media outlets as well as within online communities of fan subtitling. Future research in this area is aimed at examining in further detail the nature of the impact captions (e.g. font, position, linguistic features) and their resultant effects on the cognitive processing and emotional reactions of viewers (e.g. facial expressions, allocation of attention, and laughter). From the above findings and discussion we argue that the time is ripe for more comprehensive and evidence-based research into the optimal usage of impact captioning. Such research will enable us to develop this powerful tool further to contribute to effective communications in a wide range of viewer-centred scenarios, from enjoying everyday TV content, to efficiently processing and responding to emergency warning communications.

Acknowledgements

We would like to thank Diane Blakemore, Minako O'Hagan, Dorothy Kenny and Rebecca Jackson for their contributions and insightful comments to our project.

Notes on contributors

Ryoko Sasamoto is a lecturer in Japanese and Asian Studies in the School of Applied Language and Intercultural Studies, Dublin City University. She specialises in the relevance theoretic approach to multimodal contents and mixed-methods approaches into viewer experience using theoretical and empirical methods, with a special interest in the cognitive and affective dimensions of communication.

Stephen Doherty, BA (Hons.), HDip, PhD, MBPsS, is a lecturer and research psychologist in the School of Humanities & Languages at UNSW Australia, where he conducts and supervises research in cognitive and linguistic human-computer interactions across a range of multimodal contexts, including: translation technologies, language processing, online media, and subtitling/captioning.

References

- Anotoki Kami Ga Orita 2013. TBS [Television], 6 May.
- Díaz Cintas, J. and Remael, A. 2007. *Audiovisual Translation: Subtitling*. London: Routledge.
- Doherty, S., O'Brien, S. and Carl, M. 2010. Eye tracking as an MT evaluation technique. *Machine Translation*, 24 (1), pp. 1-13.
- Doherty, S. and O'Brien, S. 2014. Assessing the usability of raw machine translated output: A user-centred study using eye tracking. *International Journal of Human-Computer Interaction*, 30 (1), pp. 40-51.
- Gaudreault, A. and Barnard, T. 2013. Titles, Subtitles, and Intertitles: Factors of Autonomy, Factors of Concatenation. *Film History: An International Journal*, 25, 1(2), pp.81-94.
- Halliday, M. A. K. 1968. Notes on transitivity and theme in English. *Journal of Linguistics*, 4, pp.179-215.
- Halliday, M. A. K. 1967. Notes on transitivity and theme in English. *Journal of Linguistics*, 3, pp.37-81.
- Himitsu no Kenmin Show 2014. Yomiuri TV[Television], 13 March.
- Kato, M. 2012. *テレビの日本語* [Japanese on TV] [Honto edition]. Iwanami, Tokyo.
- Kimura, T, Hosoi, A., Honda, N., Kato, Y., Kawamura, F., Koizumi, A., Oosawa, Y., Suzuki, E. and Watabe, K. 2000. *テレビ画面に踊る文字たちの生態学* [Physiology of Letters Dancing on TV screen], *Galac* 366.
- London Hearts 2012. TV Asahi [Television], 6 August.
- Mangiron, C. 2013. Subtitling in game localisation: A descriptive study. *Perspectives: Studies in Translatology*, 21 (1), pp.42-56.
- Mitsubishi UFJ Research & Consulting. 2011. 国内外における字幕放送に関する調査研究報告書 [Report on TV subtitling in Japan and abroad] [online] Available from: http://www.soumu.go.jp/main_sosiki/joho_tsusin/b_free/pdf/120127_2.pdf [Accessed 28 August 2014].
- Morning Bird 2011. TV Asahi [Television], 23 August.
- Nakajima, Y., Ota, Y., and Inoue, M. 1990. The effect of verbal information on the processing and memory of moving picture. *Bulletin*, University of Osaka. 16, pp.65-89.
- News Live 2013. FNN [Television], 14 August.

- Nihon Hoso Kyokai (NHK). 2013. 「津波警報変更」へのNHKの対応について [NHK's response to the change made to tsunami-warning] [Press Release] Available from http://www.town.fukui-mihama.lg.jp/open_imgs/info/0000003373.pdf [Accessed 29th August 2014]
- O'Hagan, M. 2009. Evolution of user-generated translation: Fansubs, translation hacking and crowdsourcing. *Journal of Internationalisation and Localisation*, 1, pp. 94-121.
- O'Hagan, M. 2010. Japanese TV entertainment: Framing humour with open caption telop. In: Chiaro, D. (ed.) *Translation, humour and the media: Translation and Humour*, Volume 2, London: Continuum, pp.70-88.
- O'Hagan, M. 2013. Subtitling as a languaging test bed in the 21st century: From fansubs to impact captioning. *IN: International conference of Subtitling: A Collective Approach, 12-13 July 2013, Nottingham University, UK.*
- P-Can Telebi 2011. Tokai TV [Television], 22 September.
- Park, J. S-Y. 2009. Regimenting languages on Korean television: subtitles and institutional authority. *Text & Talk* 29(5), pp. 547-570.
- Pérez-González, L. 2012. Co-creational subtitling in the digital media: Transformative and authorial practices. *International Journal of Cultural Studies* 16 (1), 3-21.
- Sakamoto, M. 1999. 氾濫する字幕番組の功罪 [Benefit and sin of overuse of subtitled programmes]. *Galac* 356, pp. 36-39. Available from <http://www.maroon.dti.ne.jp/mamos/tv/jimaku.html> [Accessed 29 August 2014]
- Sasamoto, R. 2014 / in press. Impact Caption as a highlighting device: Attempts at Viewer Manipulation on TV. *Discourse, Context and Media*. Available from: <http://www.sciencedirect.com/science/article/pii/S2211695814000130> [Accessed 29 August 2014]
- Sasamoto, R. and Doherty, S. 2013. Manipulating the mind of others - the use of subtitles as viewer manipulation. *IN: Cognitive Futures of the Humanities, 04-06 April 2013, Bangor, UK.*
- Sherlock 2010. BBC [Television], 25 July.
- Shitara, K. 2008 The way how to watch TV with the telop – the distinctions between students and adults -. *Mukogawa Women's University Annual report of Research Institute for Linguistic Cultural Studies*, 20, pp. 29-54.
- Shitara, K. 2011. The change of Telops on NHK variety shows. *Bulletin of Mukogawa Women's University, Humanities and Social Science*, 59, pp. 1-9.

- Shiota, E. 2003. 関連性理論とテロップの理解 [Relevance theory and understanding of telop]. *Journal of Ryukoku University*, pp.63-91.
- Sperber, D. and Deirdre Wilson. 1995. *Relevance: Communication and cognition*, 2nd ed. Oxford: Blackwell.
- Suto, H. 2008. Influences of Telops on the receivers' interpretation. *Informatics* 1 (2), pp. 13-20.
- Suzuki, H., Kawakami, Y., Murata, K., and Fukuda, M. 1997. An Experimental Study for the Development of 'Robust' Disaster Warning. *The research bulletin of the Institute of Socio-Information and Communication Studies*, the University of Tokyo, 9, pp. 1-36.
- Wilson, D. and Wharton, T. 2006. Relevance and prosody. *Journal of Pragmatics*, 38, pp.1559-79.

List of Figures

Figure 1: A typical impact caption use in an entertainment programme (London Hearts 2012)

Figure 2: Use of a wipe image in entertainment programmes (*Ibid.*)

Figure 3.1: Conventional use of caption in news programmes (News Live 2013)

Figure 3.2: Compensatory use of captions (News Live 2013)

Figure 3.3: Dynamic positioning of captions and image (News Live 2013)

Figure 4.1: Title movement (News Live 2013)

Figure 4.2: Title movement (News Live 2013)

Figure 4.3: Title movement (News Live 2013)

Figure 4.4: New Scene with the news title on top right (News Live 2013)

Figure 5: NHK's new guideline for crisis communication design (NHK 2013)

Figure 6.1: Impact caption displaying Sherlock's observation of Dr. Watson's face (Sherlock 2010)

Figure 6.2: Impact caption displaying the smartphone search Sherlock is conducting (Sherlock 2010)

Figure 7: The number of characters per minute per decade from 1960 to 2000 (*ibid.*, p. 3)

Figure 8: An example of timing error with resulting incorrect caption (Morning Bird 2011)

Figure 9: Caption error with serious consequences (P-Can Telebi 2011)

Figure 10: Impact caption use to highlight a possible interpretation (Anotoki Kami Ga Orita 2013)

Figure 11: Highlighting meta-directives (Himitsu no Kenmin Show 2014)