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Melodramatic animation in crime news and news information learning

Ka Lun Benjamin Cheng
Hong Kong Baptist University, benjicheng@gmail.com

Wai Han Lo
Hong Kong Baptist University, janetlo@hkbu.edu.hk

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Melodramatic animation in crime news and news information learning

ABSTRACT

This study is conducted within the framework of dual-coding hypothesis, and it examines the effects that using melodramatic animation in crime news reports has on the learning of news information among older children in Hong Kong. For this study, 74 older children (mean age = 15.3) participated in an experiment that involved being exposed to news videos that either did or did not include melodramatic animation. The results showed that the participants learned news information better if it was presented with melodramatic animation. The social implications of the results are discussed.

INTRODUCTION

The aim of this study is to explore the influence that melodramatic animation, a newly emerging news format, has on children's learning of news information. For many years academics have investigated the influence of news presentation formats on audience perceptions. Past studies have examined how the characteristics of news anchors, the picture quality (Lee, 1978), webpage design (Flanagin & Metzger, 2007) or the style of visual images (Kioussis, 2006) influence perceptions regarding the news. However, the effect of animation in news reports on knowledge acquisition has rarely been explored (Cheng & Lo, 2012; Cheng & Lo, 2015; Merkt, Weigand, Heier, & Schwanet, 2011). One reason for the absence of any serious discussion on the role of animation in news reporting is that animation has only recently become a common practice in news media across the world (Fox et al., 2004; Knight, 2007). Also, animation in news reporting is typically used to provide supplementary information, such as images showing damage to a plane¹ or illustrations concerning the effects of a natural disaster.²

Under these circumstances, it is understandable that many observers have considered animation as having secondary importance, and journalism-related studies have only recently concentrated on the relationship between alternative news presentation formats and audience news evaluations. Past studies have rarely examined the use of animation in news reports. Instead they have mainly investigated whether video reports are better than print in terms of

¹ Please refer to <https://youtu.be/qjySIZUHNso>

² Please refer to <http://news.bbc.co.uk/2/hi/science/nature/4588149.stm>

audience retention and understanding of the news (Walma van der Molen & van der Voort, 2000). However, many media critics and scholars have argued that animation has played an increasingly significant role in news presentation (Cheng & Lo, 2012; Cohen, 2009; Lo & Cheng, 2013). In recent years, animation has become an important tool for narrating news stories. For example, Fox News used animation to illustrate how black holes can rip stars apart.³ CNN used it to recreate an airplane crash landing at San Francisco's airport,⁴ and the BBC used an animated map to describe the Battle of the Somme.⁵ Animated news contents are reaching millions of viewers through the collaboration between animated news producers such as Next Media – a media conglomerate based in Taiwan and Hong Kong – and international news networks such as Reuters (Reuters, 2012). Contents created under these collaborations are available in multi-languages and are marketed in a global scale (Next Media Animation, 2015; Next Animation Studio, 2016; Reuters, 2012). Using animation in news has become a mainstream and a global practice.

These videos reenact news stories with the use of animated characters, background music and sound effects. The characters often have dramatic facial expressions, and they engage in dialogue. This new animated presentation format is called “melodramatic animation” (Lo & Cheng, 2015). Such videos portray the details surrounding news stories as though the reporters were eyewitnesses to the events. The visual presentation of animated footage is often accompanied by verbal narration, and these presentations often provide details that could not possibly be conveyed in traditional television productions. In traditional television news, the crime news reporters could put together shots of the crime scenes or the harm done to the victims as video footage (Graber, 1990). In animated news, however, the more advanced animation technology makes it possible to visually portray the whole course of the crime from beginning to end, based on the evidence collected and interviews conducted regarding the event. This technique is especially useful because many news events are reported only after they have taken place, and journalists are therefore unable to capture these events live.

In this study, our primary target of investigation is the effect of animated news on children. Animated news reports that are distributed online may have a disproportionate effect

³ Please refer to <http://video.foxnews.com/v/4572903238001/nasa-animation-shows-massive-black-hole-shredding-star/?#sp=news-clips>

⁴ Please refer to <http://edition.cnn.com/videos/bestoftv/2013/07/07/nr-sfo-crash-animation.cnn>

⁵ Please refer to http://www.bbc.co.uk/history/interactive/animations/wwone_map_somme/index_embed.shtml

on young people, who are more likely to share these videos via the social network sites (Lo & Cheng, 2013) that have become major sources of news for children and teenagers (Pew Research Center, 2015). Facebook news videos, for example, have attracted 1.6 million Internet users. The wide circulation of these videos via social network sites increases their chances of being viewed by young people. Children may find visual or animated presentations of news events more interesting and attention-getting. Such image-based reports may also help children to learn news information more effectively, as children generally have smaller vocabularies than adults (Gunter, Furnham & Griffiths, 2000). Therefore, it is important to determine the effects that using such presentation techniques have on children's learning about news events.

Although many media critics have warned that the use of animation may violate the journalistic principles of objective news reporting, animation has long been regarded as an aid to learning (Meyer & Moreno, 2002). In other words, animated news may work better than other news presentation formats for facilitating the learning of news knowledge. Previous studies have indicated that young people learn better with the help of properly used animation (e.g., Thompson & Riding, 1990). Some studies have suggested that learning outcomes can be maximized if animation is used to help young users in terms of cognitive processing. Animation can also lead to better learning of mathematics, motor skills or skills for dealing with unfamiliar situations (e.g. Rieber, 1991; Moreno & Mayer, 1999). Given these established findings, it can be predicted that melodramatic animated news may influence news learning, which is the major focus of the present study.

The theoretical aim of this study is to better understand the interrelationships between news presentation formats and learning. Empirically, the study investigates the influence of melodramatic news reporting on the viewers' levels of learning about the news. This study adopts the dual-coding hypothesis as its theoretical framework. This hypothesis suggests that the use of coordinated verbal-visual components in a presentation enhances the effectiveness of learning (Paivio, 1986; Clark & Paivio, 1991). The dual-coding hypothesis (Paivio, 2007; Sadoski & Paivio, 2013) and its extended theoretical framework on the cognitive theory of multimedia learning (Mayer, 2014) have inspired a great number of studies. However, to the best of the authors' knowledge this study is the first to adopt the hypothesis in a journalism context to investigate the effects of melodramatic animation on news information learning by children. From a practical perspective, the study contributes to the debate among practitioners

over the use of this new presentation format (Cheng & Lo, 2015; Coren, 2010). This study is an extension of previous studies related to the use of melodramatic animation, viewer judgment of news and the perceived credibility of news reporting (Cheng & Lo, 2012; Cheng & Lo, 2015; Lo & Cheng, 2015). This study will enrich the literature in these areas and will inform discussion and debate among journalism scholars, practitioners, policy makers and educators on the practical and ethical issues involved in the global trend towards such innovative and emerging techniques in news reporting.

LITERATURE REVIEW

Previous studies on the effects of melodramatic animation have drawn a critical response from those opposed to this news reporting format. Cheng and Lo (2011) defined sound effects, visual effects and detailed news story plots as the three elements in animated news. Among these elements, sound effects were found to be the most clearly related to perceived news credibility. These researchers reported that college students judged that news videos with melodramatic animation were just as credible as videos without such animation. In a follow-up study by Lo and Cheng (2013), it was found that the different motives associating with animated news viewing among college students were related to news perception. Animated news reports have a higher credibility, higher trustworthiness and can induce higher intention to relay the content among peers on social media if the reports are used for information-seeking purpose (Lo & Cheng, 2013). These scholars have asserted that young people may not distinguish between the animated elements and the genuine contents in a news video, and they may take the elements constructed by news producers as highly believable (Cheng & Lo, 2012; Lo & Cheng, 2013).

Such assertions were later supported by a study that investigated the viewers' experience of presence during reported events, and the effects that such experience had on their evaluations of the characters presented in animated news reports. In their experiment, Cheng and Lo (2015) found that use of animation in reports of violent events aroused a more intense experience of presence for the viewers. Those viewers who experienced such an intensified sense of presence subsequently reported more negative perceptions toward the suspects featured in the news. Such viewers were more confident in judging that the suspects had actually committed the crimes. The viewers also perceived the news as more credible if they experienced a heightened sense of presence in viewing animated news reports (Lo &

Cheng, 2015). These results suggested that the use of animation in crime news reports can steer the viewers toward perceiving the events according to the way the animation is framed and presented. The judgments of the viewers toward people involved in the news seemed to be influenced by the inclusion of the animation technique. This finding has been especially controversial because many legal systems operate on the assumption that people should be regarded as innocent until the court's final judgment. The practice of using animation to reconstruct the crime has been held to compromise the professional principles that were traditionally held by journalists.

News formats and learning

In evaluating news reporting methods, media scholars, psychologists and educators have long investigated which news formats are most effective in terms of learning. In the 1980's and 90's, a vast number of studies considered how different modalities of television messages influenced the viewers' retention and comprehension of news information. As television enabled viewers to see what was happening, the effectiveness of its visual presentations could be compared with the effectiveness of verbal descriptions given in the print or radio broadcast media. The results of these studies generally showed that an appropriate use of visuals could enhance news information learning. Through using content analysis and experimentation, Graber (1990) found that the visual themes of news reports were better recalled than the verbal descriptions. The viewers were better able to pick up information that was visually presented, especially when the reports featured unusual sights or pictures of people. These visuals provided the viewers with information about the characteristics of the individuals featured in the news, and such portrayals could prompt the viewers to form opinions regarding these people. The respondents in Graber's study mentioned that visuals aided their learning, as the images helped them to gain clarity on the news stories and on the situations involved (such as the scope of a disaster or the living conditions inside a prison cell).

Other studies have provided additional support for the assertion that visuals aid news learning. Berry and Brosius (1991) found that audiences acquired more news information when they viewed news reports in a film format (news with genuine video footage) than they did with news delivered in a "talking-head" format (news narrated by a newscaster). These researchers explained that a film format could better attract the viewers' attention and provide information in a more vivid way that aids news learning. Gunter et al. (2000) found that

children were better able to recall news reports that were presented with a mix of verbal and visual components. This team of researchers concluded that visual news information was remembered better than information presented in the audio or print media, regardless of the respondents' language proficiency or expectation of a recall test.

The acquisition of news information has also been found to be more effective with the use of motion graphics in news reports. A series of experimental studies conducted by Fox et al. (2004) suggested that the use of motion graphics influences the users' capacity for information storage and retrieval. The viewers of news reports involving such animation techniques were able to recall news information better than their counterparts who viewed the more traditional forms of media. This result applied with both the older and younger participants in the study. Re-enactment of events, another presentation strategy in broadcast media, also enhanced information acquisition (Leutner, Leopold & Sumfleth, 2009). A series of experiments on archaeological and historical documentaries showed that information presented with pictorial re-enactments of cultural events together with verbal narration in traditional slideshow format was more accurately recalled. Facts that were closely linked to the narrative plotline were particularly well recalled (Glaser, Garsoffky & Schwan, 2004).

Although visual presentation is generally held to be an effective aid to learning, many media scholars have pointed out that news producers should look into the most appropriate use of visuals to ensure effective learning, rather simply promoting the use of the visuals *per se*. Visuals may actually impair learning if they correspond poorly to the verbal component of a news report (e.g., Drew & Grimes, 1987; Graber, 1990; Berry & Brosius, 1991; Gunter et al., 2000). Inconsistent visual-verbal presentation is likely to interfere with comprehension, as the viewer may be distracted if required to process both kinds of information at once. The cognitive load required to comprehend such information may result in a lower capability to retain it (Findahl & Hoijer, 1981; Lachman, Lachman & Butterfield, 1979).

The findings of these studies have provided qualified support for the dual-coding hypothesis. This hypothesis is a major tenet of the cognitive theory of multimedia learning (Mayer, 2014) that explains the cognitive processing of visual/verbal components involved in the acquisition of information from multimedia platforms. This hypothesis suggests that learning is more powerfully aided when information is represented by both images and verbal codes (Clark & Paivio, 1991; Graber, 1990; Grimes, 1990; Paivio, 1969; 1971; 1986). The dual visual and verbal representation of information mediates learning, as the different

representations offer additional retrieval cues during recall. When the visual information is consistent with the verbal representation, both the image and the text convey the same propositional meaning. Such visual-verbal redundancy can enable viewers' to distribute their attention between the two sensory channels, and subsequently to more easily recall the information. Other scholars have arrived at a similar conclusion and have suggested that by accompanying consistent images such as re-enactments of events with auditory messages, audiences can be relieved of the resource-demanding process of generating mental representation, resulting in reduced cognitive load and enhanced narrative processing and learning (Glaser, et al., 2012; Leutner, et al., 2009). Other studies have also offered empirical validation to this hypothesis (e.g. Walma van der Molen & Klijn, 2004; Walma van der Molen and van der Voort, 1997, 1998). For example, Walma van der Molen and van der Voort (1997, 1998) showed that televised news reports using redundant visual and verbal media were better recalled than news reported in print or in television media with inconsistent images. An extended study by Walma van der Molen and Klijn (2004) showed that good semantic overlap between pictorial and verbal information has significant positive effects on news information recall in both television and print news reporting. This study also found that television elicits stronger recall than print media when the amount of related audiovisual information is larger, suggesting that the consistency and volume of images and text significantly aids news learning (Walma van der Molen & Klijn, 2004).

Animation and learning

In the past few decades, the study of animation that targets children has gained prominence in the context of education. Animation has been found popular among children due to its power to draw their attention (e.g., Levin & Anderson, 1976) and increase their ability to remember (Palmer & Aimme, 1974). The use of animation has been shown to facilitate learning among children (e.g., Lowe, 2003), and it has been widely recognized that appropriate use of animation can promote young learners' understanding (e.g., Thompson & Riding, 1990). Other researchers have shown that a more pronounced effect on learning can be achieved when animation is used in a way that is consistent with how people cognitively process information (Mayer & Moreno, 2002). The use of animation has also been found to aid incidental (Rieber, 1991), mathematical (Moreno & Mayer, 1999) and procedural learning (ChanLin, 2000). In the field of health communication, animation has been commonly used

by various business and welfare organizations to promote desirable behavior among children (e.g., Jaume et al., 2015).

Although studies concerning the effects of animation on learning have proliferated for several decades, such studies have lagged behind in relation to journalism, as animation techniques are rather new in the news media. We believe that the presentation of news information through animation may benefit learning among children in several ways. Some concepts might be comprehended more easily through animation, as children often have a more limited vocabulary than adults. The understanding of a verbal story can also be enhanced, as animation can show the details and motions involved in how the characters involved interact. Using animation techniques can also help to capture young people's attention and increase their interest, as animated news is often used for entertainment purposes (Lo & Cheng, 2013). The transmission of animated information can be perceived as more realistic than verbal messages, as melodramatic animation influences the sense of presence (Cheng & Lo, 2015; Lo & Cheng, 2015). Animation and other visual form of presentation such as pictures can offer a great deal of information very efficiently (e.g., Eitel, Scheiter, Schüler & Nyström, 2013; Lin & Atkinson, 2011), and it can reduce ambiguity of meaning.

In this study, we hypothesize that children more accurately recall news story information when the reports are presented with melodramatic animations. As noted earlier, the dual-coding hypothesis suggests that visual-verbal representations are more powerful than single-media representations as learning aids. Specifically, a redundant visual image offers viewers extra memory codes to assist recall. Presentations of semantic overlapping information between pictorial and verbal components can therefore enhance news learning (Walma van der Molen & Klijn, 2004). Melodramatic animation is often accompanied by reporter narration in news reports. In this study, we predict that this combination enhances news information learning by children. Moreover, animated content can provide details about the course of a news event, which helps to fill in any image gaps in the news story (CNN.com, 2010). The use of animation to re-enact news events is an emerging news reporting strategy. Previous studies on educational documentaries have shown that re-enactment strategies that involve a traditional slideshow with still pictures are effective in aiding information recall (Glaser et al., 2004). The present study investigates the effects of melodramatic animation, a more advanced technology for news reenactment, and proposes the following hypothesis:

Hypothesis: Children are better able to recall news story information from reports presented with melodramatic animation than from reports without such animation.

METHODOLOGY

A total of 74 older children (with a mean age of 15.3) were recruited from a secondary school in Hong Kong by using convenient sampling. Consent was solicited from the teachers for the children's participation in the study. All of the participants were secondary 3 students (equivalent to grade 9). They were 70.3 percent male and 29.7 percent female. The participants were randomly assigned to one of two conditions. In condition 1, the participants were exposed to a news video using melodramatic animation. In condition 2, the participants were exposed to a news video without melodramatic animation. Among the participants, 56.8 percent were assigned to condition 1 and 43.2 percent were assigned to condition 2. After the exposure to these stimuli, the participants were asked to respond to a set of questions. Each of the participants was assigned a computer, on which they were exposed to a randomly assigned stimulus and responded to a series of questions through Qualtrics, an online survey tool. The experiment required about 15 minutes. The participants were then thanked and debriefed after the experiment.

Stimuli

The study adopted a news video using a melodramatic animation from Apple Action News (stimulus in condition 1⁶) (see Fig. 1 for a sample frame). This video concerned a domestic helper who was caught for the crimes of bullying and robbing her employer. The video lasted for 1 minute and 22 seconds, of which 40 seconds of the content involved animation. The animated part featured the domestic helper forcefully pushing her employer onto a bed and snatching the employer's gold necklace. The animation also depicted the employer's teeth being knocked out, with some blood being spilled during the fight. A subsequent part of the animation narrated how the domestic helper disposed of her weapon, and showed details of the police visiting the flat where the event happened. The whole video began and ended with genuine video footage, including shots of the environmental scene where the story took place. It also showed real footage of the suspect being taken to the police office. The logo of Apple Action News was shown throughout the video.

⁶ The stimulus with melodramatic animation is available at <https://www.youtube.com/v/2-FQDyWZDeo>

The manipulated version of the video (stimulus in condition 2⁷) (see Fig. 2 for a sample frame) was an edited video concerning the same event, in which the animated part was removed, and replaced by shots taken at the housing estate where the event took place. The second video also included footage taken outside the police station where the case was reported. The inclusion of these shots was edited to resemble the original video produced by Apple Action News, but without animated content. The length of the two videos was the same. A professional news anchor was invited to re-narrate the news using the original script, which ensured that the information that the narrator communicated was identical for both videos. A trial screening of the videos was conducted with four journalism undergraduate students, and the manipulated version was revised based on their comments received after the screening. The two stimuli videos were then judged to have the same informational quality, and to resemble the news video produced by the media organization.

Instrument of measurement

This study aimed to investigate the effects of animated news videos on children's learning of news information. Therefore, after their exposure to one of the two stimuli, the participants were asked to respond to four multiple-choice and four short-answer questions regarding the details of the news story (i.e., What was snatched by the domestic helper? What weapon did she throw from the window?). An index of news information learning was calculated by adding the number of correct answers to the multiple choice and short-answer questions. The measurement tool was developed in response to Berry and Brosius (1990), who asserted that question-prompted recall is a more appropriate index of news learning than free recall. Both stimuli involved identical anchor narration. As the study used the dual-coding hypothesis as its framework, the answers for all questions were provided as redundant visual-verbal information for the students in the animated news condition, and the same information was communicated through the verbal description only for students in the non-animated news condition.

To code the answers to the short-answer questions, two researchers first discussed the coding criteria. Researcher 1 coded all the answers (correct versus incorrect). Researcher 2 then randomly selected 25% of all cases (N=19) and recoded the answers. Because each participant was asked to respond to four short-answer questions, a total of 76 answers were recoded. The intercoder reliability was satisfactory (Cohen's kappa = .80).

⁷ The stimulus without melodramatic animation is available at <http://www.youtube.com/v/jSM253fuuyw>

Past studies have shown that prior exposure to specific media content affects the viewer's perception of that content. This study adopted a video that had actually been released to the public by Apple Action News. In other words, it was likely that the participants had seen the video prior to the experiment. After their exposure to the video in the experiment, the participants were asked if they had previously watched the same video. If they did, they were then asked the number of exposures they had experienced prior to the study. Therefore, prior exposure was not included in the subsequent test. In the last part of the questionnaire, demographic data such as age, gender and grade of study were solicited.

RESULTS

The study first tested the effect of prior exposure as a control variable to the news learning. 32.4 percent of the participants reported that they had not watched the video prior to the experiment. The result of linear regression analysis showed that prior exposure to the video had no significant effect on the news information learning ($\beta = -.18, p = .126$). For the index of news information learning, the participants answered 6.6 out of the 8 questions correctly on average. An independent sample *t*-test was conducted to compare the means of the number of correct answers for measuring the levels of news information learning between the two experimental groups. A significant difference was observed ($t = 2.2, df = 72, p = .034$, two-tailed). The participants in the animated news condition gave more correct answers ($M = 6.9, SD = 1.3$) than those in the non-animated news condition ($M = 6.1, SD = 1.7$). Thus, the hypothesis was confirmed.

DISCUSSION

This study is merited, to our best knowledge, for being the first study to investigate how melodramatic animation affects children's learning from news reports. This study adopted the dual-coding hypothesis as its theoretic framework. The tests found that the children recalled details better after viewing news reports that featured melodramatic animation than after viewing genuine video footage. These results are in line with the body of literature on animation and learning (e.g., Lowe, 2003; Mayer & Moreno, 2002).

Animation can provide more visual details about a story, as it allows journalists to project imaginative moving images. These visuals can fill in missing images to narrate a news story in a way that is not possible with traditional television media. When the moving images consistently complement the verbal description, the dual-media messaging also enhances

learning, as the viewers can distribute their attention between the visual and verbal channels. The animated imagery also offers an extra set of codes for memory retrieval, which aids better recall of information (Paivio, 1969; 1971; Graber, 1990; Grimes, 1990). The vividness of animation may enhance attention and interest among young viewers, which in turn helps the information to be registered more effectively in their memory.

Although preliminary support is given to the dual-coding hypothesis, the findings of this study need to be interpreted with caution. The stimulus in the non-animation condition concerned a news story reported after the event had taken place. The images used to replace the animated footage were environmental shots, such as images of the crime scene and the police station where the victim had reported the case. These images had little direct relevance to the verbal description of the crime itself. This non-animated version of the video ruled out the situation in which journalists were at the crime scene, reporting the event live. It should be noted that viewers who witness a crime event through live reporting may register the details in their memories differently. Also, even if the report is not done live, the inclusion of genuine footage that corresponds well to the verbal description may also have an effect on news learning that is similar to the effects of animated footage, as previous study showed that reenactment of an event enhanced information learning (Glaser et al., 2012). Future studies will need to further investigate these alternative types of media situations.

Furthermore, this study was unable to discern the cognitive processes that the young viewers went through when viewing animated news videos, as the study involved only a simple comparison between two experimental groups. Future studies will need to investigate the mediating roles of arousal of attention or interest, and of the experience of presence in the interaction between animation and memory (e.g., Kim and Biocca, 1996; Gunter et al., 2000).

The better recall generated by animated news reports may also be attributed to various cognitive processes that the study did not investigate. It is possible that inconsistent visual-verbal representations impair learning, as the viewers may become distracted when processing two sensory channels that convey different meanings. It is also possible that young viewers pay attention only to visual images and ignore verbal messages, which makes them better able to recall information conveyed by animated imagery than by non-animated imagery. A third viable explanation is that viewers attend to both visual and verbal messages, but the redundant visuals offer additional cues for memory retrieval (Gunter et al., 2000).

Researchers in the field of animated news reporting should look into these related cognitive processes by developing more sophisticated experimental designs.

The use of melodramatic animation has sparked vigorous debate among media scholars, practitioners and welfare advocates over the ethical issues that such media entail. This type of news format is commonly said to compromise the objectivity of news reporting (Coren, 2010), as it may blur the line between providing facts and creating fictions when producers project their own imaginations into these video productions, seeking to fill in the missing pieces of a news story (HKJA, 2011). Such techniques can also lead viewers to more strongly believe in the news reports as they are framed by the reporters. Animated reporting can evoke a strong sense of presence, which can lead viewers to make unfair judgments concerning the suspects featured in the news (Cheng & Lo, 2015; Lo & Cheng, 2015). The results of this study, however, suggest one specific benefit of using melodramatic animation in news reports: this approach to reporting improves learning about news events among children.

Defenders of animated news reports may suggest that this technique can facilitate young viewers to better acquire news information and become better connected to their society. This development might counteract the trend by which young people to increasingly disengage from traditional news media, and instead turn to social networking sites for their news information (Pew Research Center, 2015). Animated news videos may provide novel contents that motivate young people to share such reports on social media platforms (Golan & Zaidner, 2008; Lo & Cheng, 2013). With its potentially extensive reach to young viewers on social media, melodramatic animation can be used to feed news information to the viewers in an effective manner. Some educators may also find it encouraging to see that teachers can make effective use of animation to narrate stories about significant news events, which can better enable young learners to acquire news information.

Child welfare advocates may hold a different point of view when interpreting the results of this study. As journalists may project their imaginations into the production of animated news (HKJA, 2011), the details of their news stories may not accurately reflect the realities surrounding the events. The information acquired from animated news by young viewers may therefore be subject to inaccuracies (Coren, 2010). It is problematic if information communicated in animated news is inaccurate because children might

misinterpret untruthful information as truthful even when the former is contrasted with the latter (Butler, Zaromb, Lyle & Roediger, 2009; Umanath, Bulter & Marsh, 2012). They might acquire inaccurate details about a news event and this could distort their perception of reality. It is especially noteworthy that melodramatic animation may influence judgments concerning veracity and credibility through arousing a more intensified experience of presence (Cheng & Lo, 2015; Lo & Cheng, 2015). Visual presentation of information with varying semantic characteristics also affects the retention of verbal content (Merkt & Schwan, 2017). It is therefore likely that information obtained from animated news reports could affect the degree to which children remember a news event and how they interpret it, which could subsequently influence their judgment of characters involved in the news story. Those who promote media literacy may advocate a more stringent media education program to teach young students how to interpret the information learned from animated news. Studies suggest that feedback on the truthfulness of media content encourages young viewers to be more critical, and thus not accept false information (Umanath, Bulter & Marsh, 2012). Hence, parents are encouraged to co-view animated news videos with their children, discuss the content with them, and to help them in critically reviewing the information and the representations provided by these videos. Parents are often found to be effective socializing agents for mitigating the effects of media on children (e.g., Chan & McNeal, 2003).

Merits aside, it is important to address a few limitations of this study. First, the experimental method used in the study involved a convenient sampling among older children. The generalizability of the results to other demographic groups is therefore limited. It is especially noteworthy that the cognitive development of older children is different from that of younger children in terms of the way they perceive, interpret and reflect on incoming messages (John, 1999). Younger children may respond to animated news videos differently than this study's participants. This study also featured just one crime news report, and it compared only the presence or absence of melodramatic animation. A more sophisticated study that manipulates various variables needs to be done in the future, as learning is influenced by multiple factors such as the experience of presence (e.g., Kim & Biocca, 2006) or individual characteristics (e.g., Eveland, 2002). This study was also conducted at a laboratory setting. Readers need to be cautious about the ecological validity of such studies. In a real news viewing setting, the media users may view the news using smart phones, and they may co-view with other individuals. The results of the study may therefore not apply for such different media-viewing situations. Moreover, the data were collected immediately after

exposure to the stimuli. The study was therefore not able to test delay effects on recall.

CONCLUSION

This study, to our best knowledge, is the first to investigate the effects of melodramatic animation in news reports on children's learning of news information. The results show that children recall more information after viewing news reports with melodramatic animation than after viewing reports without such animation. It is an observable trend that news organizations have incorporated new technologies in the process of identifying, producing and presenting news stories. This is a market in which various news organizations face keen competition for the attention of their audiences (Aitamurto & Lewis, 2013). Using animation technologies seems to be one strategy for engaging the audience in such a competitive media environment. With the advancement of media innovation, storytelling methods and presentation formats have dramatically changed to fit the changing characteristics and needs of young people, who are commonly digital natives from their first years. The increasing complexity of interactive features available on social and mobile media has further contributed to the revision of media content. Other technologies such as augmented reality (Pavlik & Bridges, 2013) or Oculus Rift (Worthman, 2014) are increasingly common in media productions, and such technologies have drastically altered the ways that media content is presented. These technologies may have cognitive, perceptual and social effects on the audience, and on the process of commodifying the news. Media scholars, journalists and education psychologists should continue to conduct research to investigate the effects of melodramatic animation and other technologies in news reporting. The results of these studies will be informative to various stakeholders, and will enable further dialogue on the appropriate use of new technologies for the welfare of young people.

REFERENCES

- Aitamurto, T., & Lewis, S. C. (2013). Open innovation in digital journalism: Examining the impact of Open APIs at four news organizations. *New Media & Society, 15*, 314-331.
- Berry, C., & Brosius, H. (1991). Multiple effects of visual format on TV news learning. *Applied Cognitive Psychology, 5*, 519-528.
- Bloomberg Business (January 6, 2016) Company Overview of Next Media Animation Limited. Retrieved from <http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapid=46884065>
- Butler, A. C., Zaromb, F. M., Lyle, K. B., & Roediger, H. L. (2009). Using popular films to

- enhance classroom learning: The good, the bad, and the interesting. *Psychological Science*, 20(9), 1161-1168.
- Bucy, E. P. (2004). The interactivity paradox: Closer to the news but confused. In E. P. Bucy & J. E. Newhagen (Eds.), *Media Access: Social and Psychological Dimensions of New Technology Use* (pp. 47–72). Mahwah, NJ : Erlbaum.
- Chan, K., & McNeal, J. U. (2003). Parent-child communication about consumption and advertising in China. *Journal of Consumer Marketing*, 20(4), 317-332.
- Cheng, B. K. L., & Lo, W. H. (2012). Can news be imaginative? An experiment testing the perceived credibility of melodramatic animated news, news organizations, media use, and media dependency. *Electronic News*, 6, 131-150.
- Cheng, B.K.L, & Lo, W.H. (2015). The effects of melodramatic animation in crime-related news. *Journalism and Mass Communication Quarterly*. 92(3), 559-579.
- Clark, J. M., & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology*, 3(3), 149-210.
- Columbia Journalism Review. (August 4, 2014). Animated news site gives US expansion a secondary try. Available at:
http://www.cjr.org/behind_the_news/animated_news_site_gives_us_ex.php
- Cohen, N. (2009, December). In animated videos, news and guesswork mix. *The New York Times*. Retrieved from
http://www.nytimes.com/2009/12/06/business/media/06animate.html?_r=0
- Coren, A. 2010. “CNN Interviews Jimmy Lai on Animation News.” CNN Asia Pacific, February 2. <http://www.cnnasiapacific.com/press/en/content/523/>.
- Drew, D. G., & Grimes, T. (1987). The effect of audio-visual redundancy on audio and video recall in television news. *Communication Research*, 14, 452-461.
- Eitel, A., Scheiter, K., Schüler, A., & Nyström M. (2013). How a picture facilitates the process of learning from text: Evidence for scaffolding. *Learning and Instruction*, 28, 48-63.
- Eveland, W. P. (2002). News information processing as mediator of the relationship between motivation and political knowledge. *Journalism and Mass Communication Quarterly*, 79(1), 26-40.
- Findahl, O., & Hoijer, B. (1981). Media content and human comprehension. In K. E. Rosengren (Ed.). *Advances in Content Analysis*. Beverly Hills, California: Sage.
- Flanagin, Andrew J., and Miriam J. Metzger. 2007. “The Role of Site Features, User Attributes, and Information Verification Behaviors on the Perceived Credibility of Web-

- based Information.” *New Media and Society* 9 (2): 319–342.
- Fox, J. R., Lang, A., Chung, Y., Lee, S., Schwartz, N., & Potter, D. (2004). Picture this: Effects of graphics on the processing of television news. *Journal of Broadcasting & Electronic Media*, 48, 646-674.
- Glaser, M., Garsoffy, B., & Schwan, S. (2012). What do we learn from docutainment? Processing hybrid television documentaries. *Learning and Instruction*, 22, 37-46
- Golan, G. J., & Zaidner, L. (2008). Creative strategies in viral advertising: An application of Taylor’s six-segment message strategy wheel. *Journal of Computer-Mediated Communication*, 13(4), 959–972.
- Graber, D.A. (1990). Seeing is remembering: How visuals contribute to learning from television news. *Journal of Communication*, 49(3), 134-155.
- Grimes, T. (1990). Audio-video correspondence and its role in attention and memory. *Education Technology Research and Development*, 38(3), 15-25.
- Gunter, B., Furnham, A., & Griffiths, S. (2000). Children’s memory for news: A comparison of three presentation media. *Media Psychology*, 2, 93-118.
- HKJA (2011). Animated news is animating the news. Available online at http://hkthejournalist.blogspot.hk/2010/01/blog-post_5078.html Retrieved on 3 September 2015.
- Huang, Y.K. (2008). Exploring of the position and value of animation-cartoon industry in China TV news communication. *China Media Research*, 4(2), 1-12.
- John, D.R. (1999). Consumer socialization of children: A retrospective look at twenty-five years of research. *Journal of Consumer Research*, 26(4), 183-213.
- Kiouis, S. (2006). Exploring the impact of modality on perceptions of credibility for online news stories. *Journalism Studies*, 7, 348-359.
- Kim, T., & Biocca, F. (1997). Telepresence via television: Two dimensions of telepresence may have different connections to memory and persuasion. *Journal of Computer-Mediated Communication*, 3. doi: 10.1111/j.1083-6101.1997.tb00073.x
- Knight, A. D. (2007). *Who is a journalist?* Paper presented at the proceedings of 16th AMIC Annual Conference/1st WJEC Media, Education and Development: The Quest for New Paradigms, Singapore.
- Lachman, R. J., Lachman, L., & Butterfield, E. C. (1979). *Cognitive Psychology and Information Processing: An Introduction*. Hillsdale, N.J: Lawrence Erlbaum.
- Lee, Raymond S. H. 1978. “Credibility of Newspaper and TV News.” *Journalism Quarterly*, 55 (1): 282–287.

- Leutner, D., Leopold, C., & Sumfleth, E. (2009). *Computers in Human Behaviour*, 25(2), 284-289.
- Lin, L., & Atkinson, R. K. (2011). Using animations and visual cueing to support learning of scientific concepts and processes. *Computers & Education*, 56(3), 650-658.
- Lo, W. H., & Cheng, B. K. L. (2013). Fueling the debate: Predictive relationships among personality characteristics, motives and effects of animated news viewing. *Journal of Applied Journalism & Media Studies*, 2, 135-160.
- Lo, W. H., & Cheng, B. K. L. (2015). The use of melodramatic animation in news, presence and news credibility: A Path Model. *Journalism Studies*, Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/1461670X.2015.1087814?journalCode=rjos20>
- Mayer, R. E. (2014). *The Cambridge handbook of multimedia learning* (2nd ed.). New York, NY: Cambridge University Press.
- Mayer, R. E. & Moreno, R. (2002). Animation as an aid to multimedia learning. *Educational Psychology Review*, 14(1), 87-99.
- Merkt, M., Weigand, S., Heier, A., & Schwan, S. (2011). Learning with videos vs. learning with print: The role of interactive features, *Learning and Instruction*, 21, 687-704.
- Merkt, M., & Schwan, S. (2017). What you see is what you remember? Depictions of historical figures influence memory for historical facts. *Learning and Instruction*, <https://doi.org/10.1016/j.learninstruc.2017.05.004>
- Moreno, R., & Mayer, R.E. (1999). Multimedia-supported metaphors for meaning making in mathematics. *Cognition and Instruction*, 17(3), 275-248.
- Next Animation Studio. (2016). About Next Animation Studio. Retrieved from <http://nextanimation.com.tw/us/about.php>
- Next Media Animation. 2015. "Next Media Animation." Accessed July 20. <http://www.multiplejournalism.org/case/next-media-animation>.
- Paivio, A. (1969). Mental imagery in associative learning and memory. *Psychological Review*, 61, 179-211.
- Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt.
- Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.

- Paivio, A. (2007). *Mind and Its Evolution: A Dual Coding Theoretical Approach*. Mahwah, N.J.: L. Erlbaum Associate.
- Pavlik, J. V., & Bridges, F. (2013). The emergence of augmented reality (AR) as a storytelling medium. *Journalism & Communication Monographs*, 15, 4-59.
- Pew research center. (July, 14, 2015). The evolving role of news on Twitter and Facebook. Available at <http://www.journalism.org/2015/07/14/the-evolving-role-of-news-on-twitter-and-facebook/>
- Rieber, L.P. (1991). Animation, incidental learning, and continuing motivation. *Journal of Educational Psychology*, 83(3), 318-328.
- Reuters. 2012. "Reuters to Distribute Next Media Animation's News Direct 3-D Animated Videos." Reuters, July 12. <http://www.reuters.com/article/2012/07/12/idUS143865+12-Jul-2012+MW20120712>.
- Sadoski, M., & Paivio, A. (2013). *Imagery and text: A dual coding theory of reading and writing* (2nd ed.). New York, NY: Routledge.
- Teo, H.-H., Oh, L.-B., Liu, C., & Wei, K.-K. (2003). An empirical study of the effects of interactivity in Web user attitude. *International Journal of Human-Computer Studies*, 58 (3), 281–305.
- Thompson, S.V., & Riding, R.J. (1990). The effect of animated diagram on the understanding of a mathematical demonstration in 11- to 14-year-old pupils. *British Journal of Educational Psychology*, 60(1), 93-98.
- Umanath, S., Butler, A. C., & Marsh, E. J. (2012). Positive and negative effects of monitoring popular films for historical inaccuracies. *Applied Cognitive Psychology*, 26(4), 556-567.
- Walma van der Molen, J. H., & Klijn, M. E. (2004). Recall of television versus print news: Retesting the semantic overlap hypothesis. *Journal of Broadcast and Electronic Media*, 48(1), 89-107.
- Walma van der Molen, J. H., & van der Voort, T. H. A. (1997). Children's recall of television and print news: a media comparison study. *Journal of Educational Psychology*, 89(1), 82-91
- Walma van der Molen, J. H., & van der Voort, T. H. A. (1998). Children's recall of the news: TV news stories compared with three print versions. *Educational Technology Research and Development*, 46(1), 39-52.
- Warnick, B., Xenos, M., Endres, D. & Gastil, J. (2006). Effects of Campaign-to-User and Text-Based Interactivity in Political Candidate Campaign Web sites. *Journal of Computer-mediated Communication*, 10(3). Available at

<http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2005.tb00253.x/full>

Wong, A. (2012). Animated news is animating the news. *The Journalist*, 3. Retrieved from <http://hkthejournalist.blogspot.hk/2010/01/animated-news-is-animating-news.html>

Wortham, J. (2014, March). Creator of a virtual reality sensation. The New York Times. Retrieved from http://www.nytimes.com/2014/03/27/technology/creator-of-a-virtual-reality-sensation.html?_r=0

FIGURE



Figure 1: A sample frame of the stimulus with melodramatic animation

Line: A female thief came and snatched the victim's gold necklace

Figure 2: A sample frame of the stimulus without melodramatic animation



Line: A female thief came and snatched the victim's gold necklace