MEDIANZ • VOL 16 NO 1 • 2016 https://doi.org/10.11157/medianz-vol17iss2id196

- ARTICLE -

'Tweetube': Double-Track Communication in Bullet Curtain Websites

Meng Xu[•]

Abstract

Bullet curtain websites enable viewers to overlay their comments onto uploaded video content. Displayed from right-to-left across the screen, this commentary subtitling resembles a 'bullet curtain', so named after bullet curtain games. The experience approximates what it might be like to post tweets on top of YouTube videos. Bullet curtain websites enhance audience engagement with both video and textual elements through two-way communication: When viewers find themselves inspired by a video's content, they may post their thoughts on this, thereby partaking of intrapersonal communication; after reading these comments, other viewers may react and share their opinions by adding further commentary, a process that belongs to the category of interpersonal communication. These websites facilitate both the recreation of content, and interaction among viewers. Such two-way communication diminishes the physical barriers between viewers and creates a 'virtual tribe' viewing experience. This paper discusses the subcultural origins of the bullet curtain website to explain its social and cultural roots. The author conducted the study in China and surveyed 413 bullet curtain users, in order to understand the process and effects of such two-way communication.

The bullet curtain website refers to a new type of video-sharing platform that enables viewers to overlay their comments directly onto videos. The phrase 'bullet curtain' originated in the military, and later appeared in the ACG (animations, comics, games) field in Japan, because of the rise in popularity of shooter games (STG). Since the numerous comments rolling across the screen at the same time on such sites look like the bullets in STG, this style of commentary has become known as a 'bullet curtain'.

The core functionality of the bullet curtain site can be described as combining two of the most popular social networking sites, YouTube and Twitter, into one. Yet the bullet curtain's social meanings and effects are something new, dissimilar in their immediacy of engagement from any of those that Twitter or YouTube may be said to engender. Bullet curtain websites enhance audience engagement with both video and textual elements through two-way communication. When viewers find themselves inspired by a video's content, they may post their thoughts on this, thereby partaking of intrapersonal communication; after reading these comments, other viewers may react and share their

Meng Xu is a PhD candidate in Media and Communication at the University of Canterbury.

opinions by adding further commentary, a process that belongs to the category of interpersonal communication. The former communication process promotes audiences' engagement with the development of storylines in videos, whilst the latter solicits them to share their thoughts.

This type of website emerged in the context of China's and Japan's most recent social and cultural transformations. With the fast pace of urban life, more and more people use the internet to socialize with others in lieu of face-to-face communication. In these circumstances, bullet curtain websites have become a significant form of social media and have attracted the attention of millions of users. Niconico, one of the most popular bullet curtain websites, had 39.36 million registered members as of March, 2014. At this time, Japan had only 21 million Facebook users and 20.7 million Twitter users (Bing 2014).

Despite its popularity and influence, this new type of social media has yet to be fully examined in English-language scholarship. Indeed, bullet curtain websites are, at best, occasionally mentioned as a subcategory of a new variety of sharing websites (Lin 2013). Recent research has shown that, as a result of the popularity of bullet curtain websites in China, their social functionalities have been adopted and used on video websites and by more traditional media, such as movies and television, in an attempt to attract audiences (Coonan 2014). A piece from *News.com.au* describes this development as follows:

It might sound hideous to us oldies who like our movies distraction-free but it's tapping in to the generation with gradual[ly] waning attention spans who are active on social media and can help hashtag a movie to box office success. We can hear marketing execs rubbing their hands together right now. (Billington 2014)

This article sets out to examine the social and cultural roots of bullet curtain sites, the foundation of which lies in two-way communication. I argue that, by adopting a two-way communication system, bullet curtain sites bond with their audiences. In order to investigate this communication system, I undertook a survey of users of this technology. My exploration of two-way communication may help not only to clarify this new social media trend in China, but also allow us to better understand how bullet curtain sites can fulfill the social requirements of their users. Before analyzing these users, I will examine the origin of the bullet curtain website.

Subculture and Social Media: The Development of Bullet Curtain Websites

The popularity of bullet curtain websites is linked to 'Otaku' in Japan. 'Otaku', first arising in Japan during the 1980s, is a subculture of people who have an unusual and obsessive interest in a specific range of subjects (Galbraith and Lamarre 2010). These individuals enjoy staying indoors by themselves, playing video games and reading comic books, rather than socializing with their friends and family (Washida 2005). Otaku has emerged from the development of modern media and information technology, and its members – defined as a group of people caught up with the virtual world and the images supplied by

the modern media (Baral 1999) – are obsessively interested in the animation, comics and games (ACG) genres generated in this era of visually-oriented culture (Niu et al. 2012). Otaku are also known as geeks or nerds, and are stereotyped as being overly fascinated by intellectual pursuits, technology, electronics, gaming, and all new media (Bremner 2006, Steinberg 2004, Washida 2005). With an eccentric character and an obsessive interest in computer technology, Otaku are socially inept, yet enjoy socializing with others via the Internet. In China, 'Zhai', a literal translation of the Japanese word 'Otaku', has been adopted to describe people who participate in the virtual world and do not want to socialize with others outside of this sphere (Zhang 2011).

The Otaku subculture contributed to the emergence of bullet curtain websites. In the television era, people sat around and talked with each other about what they saw. When social media became popular, people could post comments about what they saw to communicate with each other. For Otaku, these new forms of media have allowed them to share their interests, such as animation, technology, and video games, with people in the virtual world - usually with members of the same fan group.

One way in which Otaku satisfy their need for interaction is to communicate with each other via text while they are watching videos. This could be achieved by posting comments on YouTube discussion threads, or publishing status updates on Twitter and Facebook. But the large number of YouTube comments can prove overwhelming, and the asynchronous interaction with Twitter and Facebook followers may equally lose impact as people rarely share their feelings simultaneously on these platforms. By the time they have seen these posts, the communication cue is already gone, the moment passed. Whilst Otaku can express their ideas through these channels, they may not be able to fulfill their impulses to exchange ideas with others. Bullet curtain sites may fulfill such needs, though, as comments can be displayed on a video immediately, promoting further discussion that other viewers read and react to. These comments later become part of the video itself. Watching a video with bullet curtains is like talking with many people at the same time. This experience sets off sparks in people's minds; users can feel like they are communicating with others, at a pace that approximates the immediacy of face-to-face conversation.

Niconico, the first bullet curtain website, originated in Japan (Wang 2014). In 2006, the Japanese company Niwango started this video-sharing website, using it to develop bullet curtain technology (Lin 2013). Currently, Niconico is Japan's largest original video posting website (Sato 2014). The first version of Niconico used YouTube as a video platform. However, as the site became more popular, so much traffic was rerouted from YouTube that the latter eventually denied access to Niconico (Okimatsu and Matsumoto 2010). As a result, Niconico was forced to shut down the service; however, only two weeks later it was back online with its own video server (Okimatsu and Matsumoto 2010).

Its popularity even threatened the mainstream media. In 2011, Ichiro Ozawa, the former Democratic leader in Japan, refused interviews with the mainstream media and traditional journalists, and only accepted interviews via Niconico (Lin 2013). And, in 2011, the Japanese governing party offered Niconico exclusive coverage of the whole course of the election, complete with video broadcast (Wilson 2011). Niconico also won the Japanese Good Design Award in 2007, and gained an Honorary Mention in the Digital Communities category at Prix Ars Electronica 2008. Whilst it has since diversified its content, Niconico remains an ACG-themed bullet curtain site with paid membership.

When bullet curtain websites came to China, they underwent some changes. For one, the content on Chinese bullet curtain sites goes beyond animation, comics and games. The two most popular bullet curtain sites in China are Acfun and Bilibili. Acfun (Anime Comic Fun), whose slogan is 'The foundation of Chinese homebody culture', was established in June 2007. Bilibili, originally launched in January 2010, became affiliated with the state-owned enterprise Shanghai Media Group in 2012. However, in order to attract a more diverse audience, Bilibili also offers content such as TV series, movies, music videos, documentary and short films.

Greater Influence: The Adaptability of Bullet Curtain Websites

Media convergence allows traditional media to exploit the interactive functionalities of bullet curtain websites. The first such beneficiary of bullet curtain websites in China has been live television. In 2014, Hunan TV broadcast the China Golden Eagle TV Arts Festival ceremony live, with audience comments visible directly on the TV screen (Hunan TV 2014). Millions of audience members saw the bullet curtain on their television for the first time and realised that the convergence of live TV with internet or mobile networks enabled them to share their opinions and ideas. Just as Japanese bullet curtain websites have become popular for the coverage of live election debates between political leaders ('Online viewers top 1.4 million for pre-election debate' 2012), so Chinese audience members can post their opinions about television content, which are then seen by millions of other viewers. The bullet curtain function has proven ideal for live sports broadcasts or other entertainment shows that solicit audiences to interact with content and other viewers. In contradistinction to comments posted on bullet curtain websites, however, live programs on television have to delete vulgar words or nonsensical comments. Still, in order to expand the convergent television bullet curtain technology further, there are some companies designing TV sets with built-in bullet curtain functionality, which allows individuals to use the site's smartphone app to communicate with close friends via their TV screens.

Bullet curtain movies have also emerged in Chinese cinema. In 2014, several Bullet Curtain Movies were shown in China's big cities (Feng et al 2014). Audience members were able to use their mobile phones to post comments on the big screen. At the cinema, people cannot talk with each other in the way they do in their living rooms. For socially active audiences, however, bullet curtain films can make up for this deficiency (Feng et

al. 2014). Some critics argue that comments inscribed directly on the screen could interrupt the audience's engagement with the film, but audiences do not post their comments throughout the whole film, nor at the same rate for every genre. Comedies might be the ideal genre in which to incorporate a bullet curtain function. The founder of Niconico even argues that bullet curtains can save a boring film, because the audience are able to entertain themselves. There are two kinds of bullet curtain movies: those where the comments are posted directly on the screen and those where the comments are projected on the side wall of the cinema. Both offer audiences a chance for interpersonal communication. A *New York Times* commentator wrote that the experience of viewing these movies is either a moviegoer's worst nightmare or the wave of the future (Qin 2014). Chinese audiences, especially youth audiences, in any case seem to respond very positively to this kind of movie (Zhou 2014).

Overall, this screen-based interpersonal communication mode seems to fit the contemporary audience's needs. People are used to watching TV and posting their comments on Facebook or Twitter. The bullet curtain combines the two practices and enables people to achieve synchronic communication. Take as an example the 2014 CCTV Spring gala, which led to 34 million comments on Weibo (the Chinese version of Twitter) that night. The sheer number of comments suggests substantial potential interest in watching other people's comments on the screen – something that might have helped viewers get through the boring parts in the four-hour television gala. Lacking synchronicity, the kind of communication offered by platforms such as Weibo offers only a weak interaction. Bullet curtain websites, on the other hand, strengthen the interaction between audience and content, as well as that between audience members simultaneously.

The convergence model of bullet curtain TV reminds us that the bullet curtain site is a video repository, and shares the same content as other video sites, television, and film. What, then, makes it unique compared with these other visual media? And which audiovisual genres are capable of stimulating the most numerous and frequent interactions?

Double-track Communication: Intrapersonal and Interpersonal Communication

Interaction via bullet curtain websites takes the form of screen-based, two-way communication, including both intrapersonal and interpersonal communication. Two-way communication enhances engagement with the content itself as well as with other viewers. This greater engagement with video content, as well as enhanced social functionalities, are the main reasons viewers give for using bullet curtain sites in preference to normal video sites.



Figure 1: The double-track communication of bullet curtain users

Intrapersonal communication refers to the internal operations an individual uses to process information, which in turn leads to the development of attitudes, concepts about the self, symbolic meanings/associations, and memories (Sullivan 2009). It describes, then, instances where individuals take the information they receive from the external world, internalize it, and experience some sort of symbolic activity within themselves whilst processing it. For bullet curtain users, the 'virtual tribe' style of the viewing experience dictates that such intrapersonal communication takes place quickly in order that they may keep up with other audience members. Before being able to share their thoughts, users have to engage with the content for themselves to generate their own opinions. Such internal processing of information exemplifies intrapersonal communication.

Interpersonal communication, by contrast, is an exchange of information between two or more people (Jarvenpaa and Staples 2000). It is very common for individuals to use digital media to get their messages across to one another, or to the public, by blogging, texting, tweeting, instant messaging, e-mailing, or posting on a social networking site such as Facebook (Gamble and Gamble 2014). Audiences share their thoughts and ideas with each other by streaming comments on their TV, computer, laptop, and mobile phones. Together, the synchronous and asynchronous comments on bullet curtain websites may permit the virtual sharing of thoughts to take place simultaneously. This exchange of ideas amongst viewers is a form of interpersonal communication.

Once viewers have familiarized themselves with two-way communication, they are more likely to achieve a sense of belonging and bonding on bullet curtain sites. Use of social networking sites makes it easier than ever to satisfy a need to belong (Baumeister and Leary 1995), either through passive reminders of one's connections (Gardner et al 2005), or through actual interaction. In studies of Facebook usage, however, the passive consumption of information was not found to satisfy individuals' need to belong in the same way that active use and directed communication did (Burke 2011, Ryan and Xenos 2011). Researchers in the psychology department at the University of Queensland suggest that interaction, rather than simple usage of a platform, is key to achieving a sense of belonging (Tobin et al 2015). Once again, bullet curtain sites make interaction with other people easier than ever: you can choose to view and hide other people's comments as much as you wish. This ability to exercise one's preferences throughout the interpersonal communication process leads viewers to feel as though they are part of a large group of individuals, with whom they share common interests. The comments posted by viewers on these sites are stored and displayed onscreen, so both synchronous and asynchronous interaction may generate a feeling of live communication, thereby enhancing a user's sense of belonging.

Method

Data collection

A web-based survey was used to collect data. Although there are a lot of challenges associated with online surveys, Couper (2000) argues that if research targets Internet users exclusively--as is the case in the present study--it is a good decision to employ this mode of data collection. During the two-month data collection period, a link to the survey was posted on two major Chinese bullet curtain websites, Acfun and Bilibili. The call for respondents posted on these sites explicitly informed potential participants that it was a study about bullet curtain sites with a focus on the enhancement of communication.

Of the 413 valid responses, the final sample bore a close demographic resemblance (81.12 percent) to the Chinese netizen population ('Statistical Report on Internet Development in China' 2014), consisting of young adults aged between 18 and 34, with a mean age of 24. The data sample also corresponded with the statistics gathered by Baidu, the biggest search engine in China: people who use 'bullet curtain' as a search term are within the age bracket of 19-39 (about 90 percent). Of the sample for the current study, 56.2 percent were male, 61.74 percent were university-educated, and 56.42 percent of the latter had attended or completed graduate school. As concerns occupation, 48.89 percent were working, while 51.11 percent were students. Only Internet users who resided in Chinese cities were surveyed because access to these (particular) bullet curtain websites is restricted outside of China due to copyright.

Measures of intrapersonal communication

In order to assess intrapersonal communication, the participants of the study were asked to rate the following statements on a five-point Likert scale:

- 'Watching videos on bullet curtain sites is a positive/novel experience'.
- 'Bullet curtains give me lots of amusement and lots of fun'.
- 'I gained new knowledge through reading bullet curtains'.
- 'I was seeking mutual feeling and a sense of belonging by reading others' comments'.

Measure of interpersonal communication

In order to assess interpersonal communication, the participants of the study were asked to rate the following statements on a five-point Likert scale:

- 'Bullet curtains offer recognition of an uploader's talent'.
- 'I am able to express my emotions and opinions through sending bullet curtains'.
- 'Bullet curtains may be used to influence and help others'.
- 'I would like my bullet curtains to attract more attention and replies'.

Findings

Popular genres

RQ1: What are the most popular video genres on bullet curtain sites?

The social functionalities of bullet curtain sites give them an edge when competing with other video platforms for audiences. However, if this were their only point of difference—that is, if besides this they merely offered the same content as other sites—we hypothesize that bullet curtains would not attract as many viewers as they do. It is thus worth investigating what the most popular genres of video on bullet curtain sites are, as it is perhaps these genres which inspire audiences with new ideas and an eagerness to share these ideas with others (RQ1).

Prior to seeking a response to this question through a survey, we sought an answer from Baidu, the largest search engine in China (Cecilia 2015). As Baidu Index's search-term map shows, the top three groups who use Bilibili as a search term are film and television fans, animation fans, and gamers. The results from the survey match these categories; the most popular categories in our survey were also film, television series, and animation. On bullet curtain sites, 'animation' is treated as a separate category from live-action film and TV series. 'Entertainment' refers primarily to reality TV and variety shows.

Content	Number	Percentage
Film and TV series	292	70.7%
Animation	248	60.05%
User-generated content	165	39.95%
Entertainment	137	33.17%
Music videos	85	20.58%
Gaming videos	76	18.4%
Science and Education	17	4.12%
Others	4	0.97%

Table 1: Favourite categories of videos on bullet curtain sites (multiple-choice)

In response to the question about why viewers prefer bullet curtain sites to more typical video platforms, the survey results show that 81.6% of participants said they like the bullet curtain system, 61.26% of participants think bullet curtain sites carry more content than other video sites, 36.8% of participants found the uploading of new content faster than on typical video sites, and 32.2% of participants claimed that the quality of the videos on bullet sites is better than on other platforms.

But how is it that bullet curtain sites can offer more content, and update this faster, whilst also displaying videos at a higher resolution? Since users upload the content on bullet curtain sites, there are fewer hassles over copyright. Instead, individual bullet curtain sites' primary responsibility is to improve their bullet curtain systems, so as to offer their viewers a better social experience. Other Chinese video sites spend substantial amounts on the purchasing of expensive television programs, which they often subsidize by adding more advertisements. A further advantage of user-uploaded content is that it has already passed the first test of popular taste: users are best placed to know the sort of videos likely to interest other viewers. That is to say, they have a more personal understanding of the sort of content with which other users want to engage. And they do not need to deal with censorship of the sort the Chinese government imposes on other video sites, such as requiring the submission of the whole season of a television series with subtitles for review before it is streamed online. This censorship impairs the capacity of other video sites to update content quickly, to the advantage of bullet curtain sites. Bullet curtain sites do not evade these troubles entirely, however, as the content they provide may still lead to lawsuits over copyright infringement (Miao 2014).

Intrapersonal Communication

RQ2: During the process of intrapersonal communication, what are viewers' reactions towards comments that appear while they stream videos?

The second research question is concerned with viewers' reactions to content and comments. This is the first level or track of communication (see Figure 1), where the individual viewer has to generate ideas to share with others. According to the survey, 71.91 percent of respondents agree that watching videos with comments on bullet curtain sites is a positive experience, while only 7.51 percent disagree. 96.61 percent agree that the bullet curtain itself injects an element of fun into the viewing experience, while 0 percent disagree. 91.53 percent of participants agree that they have gained new knowledge from reading bullet curtains, while 0.97 percent disagree. 89.83% of participants agree that they experience mutual feelings with others on these sites, whereas only 1.21 percent disagree.

Items/Attitudes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Watching videos on bullet curtain sites is a positive/novel experience	147 (35.59%)	150 (36.32%)	85 (20.58%)	31 (7.51%)	0 (0%)
Bullet curtains give me lots of amusement/are lots of fun	280 (67.8%)	119 (28.81%)	14 (3.39%)	0 (0%)	0 (0%)
I gained new knowledge through reading bullet curtains	210 (50.85%)	168 (40.68%)	31 (7.51%)	4 (0.97%)	0 (0%)
I was seeking mutual feeling and a sense of belonging in reading others' comments	213 (51.57%)	158 (38.26%)	37 (8.96%)	5 (1.21%)	0 (0%)

Table 2 : Intrapersonal communication via bullet curtain sites

The data shows that on the first track of communication, viewers experience an attachment to bullet curtains, motivated by the high-quality videos, experience of fun, new ideas, and a sense of belonging these may engender. Bullet curtains themselves bring about such interaction between audiences and content. Indeed, intrapersonal communication is achieved through watching videos and writing down one's thoughts, or reading those of others via the curtain's functionalities. However, this is only the baseline, and is to be expanded on in the second track of communication – interpersonal communication.

Interpersonal Communication

RQ3: During the process of intrapersonal communication, what are viewers' reactions towards interaction with others?

The third research question is concerned with the interpersonal communication engaged in by viewers on bullet curtain sites. The most important mechanism of the bullet curtain site is its promise to offer viewers a sense of social fulfilment—but by what means? In the following survey results, 51.81 percent of participants agree that the wide distribution of an uploader's comments is an indication of that uploader's talent, while only 9.68 percent disagree. 92.98 percent of participants affirm that they share their emotions and opinions by posting bullet curtains, while only 0.72 percent disagree. 75.79 percent of participants agree that their bullet curtain may inspire and help others, while 2.91 percent disagree. 47.46 percent of participants agree that they hope their bullet curtains will attract more attention and replies, while only 10.66 percent disagree.

Items/Attitudes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Bullet curtains offer recognition of an uploader's talent	95 (23%)	119 (28.81%)	159 (38.5%)	38 (9.2%)	2 (0.48%)
I am able to express my emotions and opinions through sending bullet curtains	172 (41.65%)	212 (51.33%)	26 (6.3%)	2 (0.48%)	1 (0.24%)
Bullet curtains may be used to influence and help others	111 (26.88%)	202 (48.91%)	88 (21.31%)	12 (2.91%)	0 (0%)
I would like my bullet curtains to attract more attention and replies	89 (21.55%)	107 (25.91%)	173 (41.89%)	40 (9.69%)	4 (0.97%)

Table 3: Interpersonal communication via bullet curtain sites

In general, most participants agreed that bullet curtain sites help them to fulfil a need for social interaction, whether through recognizing the talent of uploaders, sharing their feelings and thoughts with others, or inspiring and helping others. They also express a desire to become popular among other users. These are signs of interpersonal communication. Beyond the first track of communication, which involves the inward-facing aspects of engaging with bullet curtains, viewers realise interpersonal communication, which fulfils their desire for interaction with others.

Habits and Attitudes

RQ4: After getting used to double-track communication, what are viewers' attitudes toward bullet curtain sites?

The fourth research question (RQ4) concerns whether or not viewers are becoming regular users of bullet curtain sites or simply access these occasionally. As the results show, 48.91 percent of participants agree that they could not get used to watching videos with no bullet curtains, while 21.55 percent disagree. 73.47 of percent of participants agree that they choose to watch a video in order to read others' comments, while only 10.17 percent disagree. 50.85 percent of participants agree that they would discuss a bullet curtain they saw online with their friends in real life, while only 15.01 percent would not do this. 46.01 percent of participants think their mood is influenced by the rhythm of bullet curtains, while 25.42 percent disagree.

Opinions/Attitudes	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I am not used to seeing a video without a bullet	90	112	122	72	17
curtain	(21.79%)	(27.12%)	(29.54%)	(17.43%)	(4.12%)
I choose to watch some	162	141	68	30	12
videos because of their bullet curtains	(39.23%)	(34.14%)	(16.46%)	(7.26%)	(2.91%)
Bullet curtains might raise	93	117	141	50	12
topics that I would like to share with my friends in real life	(22.52%)	(28.33%)	(34.14%)	(12.11%)	(2.91%)
Watching videos with	73	117	118	84	21
bullet curtains led to mood swings for me	(17.68%)	(28.33%)	(28.57%)	(20.34%)	(5.08%)

Table 4: Bonding with bullet curtain sites

From the above, we see that two-way communication enabled by bullet curtains transformed the viewing of videos into an interactive process of bonding. Following intrapersonal communication and interpersonal communication, viewers not only become more engaged with the viewing process itself, but also come to rely on interaction with others through bullet curtains. Bullet curtains become the glue that binds together viewers with similar interests. Through engagement with bullet curtains, viewers are able to enjoy videos with greater intensity, develop new conversational strategies and resources for real life, and experience emotions through the exchange of ideas and responses.

Conclusions and Future Research

Bullet curtain websites are emerging as part of the trend towards social interaction that is reshaping the media landscape (O'Keeffe and Clarke-Pearson 2011). Both new and traditional media make use of social platforms to engage with their audiences (Mangold and Faulds 2009). With regard to intrapersonal and interpersonal communication, however, the separation of viewing and commentary common to many platforms does not fulfill the social needs of video audiences (Kietzmann et al. 2011).

On bullet curtain sites, video content includes two synchronous information tracks: image and commentary. When using these websites, audiences require more concentration, as the curtain of text may easily distract from the video. The benefits for the viewer, though, are a potential increase in enjoyment, and the opportunity to interact with other people who have similar tastes and interests. Indeed, it is like friends chatting around the table, although they may be, in fact, far away from each other. In the phase of intrapersonal communication, the viewers surveyed enjoyed the content and reading others' comments, which inspired them to seek new information outside of the video, influenced their emotions, and led them to come up with their own ideas for sharing. Interpersonal communication benefitted viewers who sought a sense of belonging through interaction with both video uploaders and other viewers, as well as letting themselves be influenced by, and influencing, others. This two-way communication process helps bullet curtain sites to retain their users, as they become accustomed to socializing with others while watching videos. These are the advantages that bullet curtain sites have when competing with other video content providers.

This article has made a preliminary investigation into bullet curtain websites, with the online survey offering general information about audience attitudes. Future studies could concentrate on the social effects bullet curtain websites exert on their audiences. Additionally, a comparison between the sense of belonging obtained from bullet curtain websites and other video sites may merit further study.

References

Baidu Index. 2017. Search results: 'bilibili'. <u>http://index.baidu.com/?tpl=trend&type=0&area=0&time=20110101%7C20150212&</u> word=bilibili.

Barral, Étienne. 1999. *Otaku: Les enfants du virtuel*. Paris: Editions Denoël.

Baumeister, Roy F. and Mark Leary. 1995. 'The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation'. *Psychological Bulletin* 117(3): 497-529.

Billington, James. 2014. 'Chinese Cinemas use "Bullet Screens" to Encourage Texting During Movies'. *News.com.au*, 21 August.

http://www.news.com.au/technology/online/chinese-cinemas-use-bullet-screens-toencourage-texting-during-movies/story-fnjwnhzf-1227032272165

Bing. 2014. 'Use data to tell you the value of niconico'. *Gamelook*, 4 July. http://www.gamelook.com.cn/2014/07/168692?utm_source=tuicool

Bremner, Brian. 2006. 'Otaku: Japan's Consumer Fanatics'. *Bloomberg*, 18 August. <u>https://www.bloomberg.com/news/articles/2006-08-17/otaku-japans-consumer-fanatics</u>

Burke, Moira. 2011. *Reading, Writing, Relationships: The Impact of Social Network Sites on Relationships and Well-being*. PhD dissertation, Carnegie Mellon University.

Cecilia. 2015. 'Sogou's New Chinese Input Method Integrated Search'. *China Internet Watch*, 9 January. <u>http://www.chinainternetwatch.com/11772/sougo-chinese-input-</u> <u>method-launched-new-version-obtain-traffic-for-sogou-search</u>

Coonan, Clifford. 2014. 'Chinese Theaters Test System of Onscreen Text Messages During Movies'. *Hollywood Reporter*, 19 August.

http://www.hollywoodreporter.com/news/chinese-theaters-test-system-onscreen-726204

Couper, Mick P. 2000. Web Surveys: A Review of Issues and Approaches'. *Public Opinion Quarterly* 64(4): 464-94.

Galbraith, Patrick W. and Thomas Lamarre. 2010. 'Otakuology: A Dialogue'. *Mechademia* 5: 360-374.

Gamble, Teri Kwal and Michael W. Gamble. 2014. *Interpersonal Communication: Building Connections Together*. Thousand Oaks CA: Sage.

Gardner, Wendi L., Cynthia L. Pickett and Megan Knowles. 2005. 'Social Snacking and Shielding: Using Social Symbols, Selves, and Surrogates in the Service of Belonging Needs'. In *The Social Outcast: Ostracism, Social Exclusion, Rejection, and Bullying*, ed. Kipling D Williams, Joseph P Forgas and William von Hippel, 227-42. New York: Psychology Press.

Gong, Yuhua, Lu Lin, Mengxuan Zhao and Han Liu. 2014. 'Do You Send Bullet Curtain on the Movie? [看电影,你弹幕了么?]'. *People's Daily*, 14 April. <u>http://society.people.com.cn/n/2014/0814/c1008-25461241.html</u>

Hunan TV. 2014. 'Hunan TV Uses Bullet Curtain on Live Broadcast of Golden Eagle Festival [湖南卫视直播金鹰节首启弹幕]'. *Sohu.com*, 13 October. http://media.sohu.com/20141013/n405060157.shtml

Jarvenpaa, Sirka L. and D.S. Staples. 2000. 'The Use of Collaborative Electronic Media for Information Sharing: An Exploratory Study of Determinants'. *The Journal of Strategic Information Systems* 9(2/3): 129-154.

Kietzmann, Jan H., Kristopher Hermkens, Ian P. McCarthy and Bruno S. Silvestre. 2011. 'Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media'. *Business Horizons* 54(3): 241-251.

Lin, Yanshan. 2013. 'Bullet Curtain: A New Comment Technology of Video Sharing Website'. Blog post, COM5101 Communication Fundamentals, City University of Hong Kong.

http://newmedia.cityu.edu.hk/com5101/updates/13a/techdetails.cfm?EID=yslin5-c

Mangold, W. Glynn and David J. Faulds. 2009. 'Social Media: The New Hybrid Element of the Promotion Mix'. *Business Horizons* 52(4): 357-365.

Miao, X. 2014. 'Bullet Curtain Website Bilibili Involved with 9 Lawsuits'. *JF Daily*, 25 December. <u>http://newspaper.jfdaily.com/xwcb/html/2014-12/25/content 51499.htm</u>

Niu, Han-Jen., Yung-Sung Chiang and Hsien-Tang Tsai. 2012. 'An Exploratory Study of the Otaku Adolescent Consumer'. *Psychology and Marketing* 29(10): 712-725.

O'Keeffe, Gwenn Schurgin and Kathleen Clarke-Pearson. 2011. 'The Impact of Social Media on Children, Adolescents, and Families'. *Pediatrics* 127(4): 800-804.

Okimatsu, Kentaro and Atsushi Matusmoto. 2010. 'Comparative Analysis of Videosharing Sites YouTube and Niconico Douga: Open Creation Model with User Participation'. *Proceedings of the 23th Annual Conference of Japan Association for Social Informatics*. <u>https://www.jstage.jst.go.jp/article/jasi/23/0/23_0_112/_article</u>

Qin, Amy. 2014. 'Theaters in China Screen Movies, and Viewers' Text Messages'. *Sinosphere*, 20 August. <u>http://sinosphere.blogs.nytimes.com/2014/08/20/theaters-in-china-screen-movies-and-viewers-text-messages/? r=0</u>

Ryan, Tracii and Sophia Xenos. 2011. 'Who uses Facebook? An Investigation into the Relationship between the Big Five, Shyness, Narcissism, Loneliness, and Facebook Usage'. *Computers in Human Behavior* 27(5): 1658-1664.

Sato, Minori. 2014. 'Everybody likes Niconico Douga, Japanese Version of YOUTUBE!' *Matcha*, 30 March. <u>https://matcha-jp.com/en/64</u>

'Online viewers top 1.4 million for pre-election debate'. 2012. *Asahi Shimbun.* http://ajw.asahi.com/article/behind_news/social_affairs/AJ201211300060

'Statistical Report on Internet Development in China'. 2014. *China Internet Network Information Center*, 21 July. http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/201407/t20140721_47437.htm

Steinberg, Marc. 2004. 'Otaku Consumption, Superflat art and the Return to Edo'. *Japan Forum* 16(3): 449-471.

Sullivan, Larry E. 2009. *The SAGE Glossary of the Social and Behavioral Sciences.* Thousand Oaks CA: Sage.

Tobin, Stephanie J., Eric J. Vanman, Marnize Verreynne and Alexander K. Saeri. 2015. 'Threats to Belonging on Facebook: Lurking and Ostracism'. *Social Influence* 10(1): 31-42.

Wang, Junling. 2014. 'Let Bullet Curtain Fly'. *T Magazine*,16 September. <u>http://cn.tmagazine.com/culture/20140916/tc16wangjunling/</u>

Washida, Yuichi. 2005. 'Collaborative Structure between Japanese High-tech Manufacturers and Consumers'. *Journal of Consumer Marketing* 22(1): 25-34.

Wilson, Matthew J. 2011. 'E-Elections: Time for Japan to Embrace Online Campaigning'. *Stanford Technology Law Review* 4: 1-35.

Zhang, Jie. 2011. 'Psychological Inquiry about Otaku Culture in College Student'. *Social Psychological Science* 26: 81-86.

Zhou, Raymond. 2014. 'Movie Critics Have Chance to Shoot from the Hip'. *China Daily*, 9 August. <u>http://www.chinadaily.com.cn/culture/2014-08/09/content_18279082.htm</u>