



Assessing Broadcasting News of Disaster

- A Focus on the Sewol Ferry Disaster in South Korea -

Yung Wook Kim¹⁺, Ji Young Lee²

¹ School of Communication & Media, Ewha Womans University, 52, Ewhayeodae-gil, Seodaemun-gu, Seoul, Korea

² S.I. Newhouse School of Public Communications, Syracuse University, 215 University Pl, Syracuse, New York, United States

Abstract

This paper examines major elements of broadcasting news on the South Korean Sewol ferry disaster, including frames, sources and visuals. The episodic and responsibility frames were frequently used in disaster news. Official government-related sources were primarily used in most news frames, whereas episodic, human interest, and community-atonement frames were mostly used when citizen and victim sources appeared. Close-up shots were contained in episodic and human interest frames. Episodic frame news used computer graphics (CG) more often than thematic news while the attribution of responsibility frame used CG elements the most among content-based news frames.

Key words: disaster news, news frame, news source, visualization

1. Introduction

The Sewol Ferry, a vessel connecting mainland South Korea to the nearby Jeju Island, sank on April 16, 2014. The crew members escaped the ferry irresponsibly, leaving behind more than 300 passengers, most of whom were high school students on a school field trip. Although more than a year has passed since the disaster occurred, many problems have been left unsolved until nowadays.

In the midst of this confusing situation, South

Korean media were blamed for releasing sensational reports to the public. Journalists highlighted the crying families of the missing while asking sensational questions such as how they felt about the deaths of their children (Cho, 2014). Additionally, the public criticized South Korean news media for omitting the truthful information about how the situation is actually going on. The government was reportedly known for controlling the news media in order to cover up its failure to manage the disaster properly. In sum, a crucial problem of domestic media during

⁺ Corresponding author: Yung Wook Kim, Tel. +82-2-3277-2237, e-mail. kimyw@ewha.ac.kr

the Sewol disaster was that news reports hardly gave objective information about the situation and balanced messages.

In fact, this was not the first time that problems of disaster news have been raised (e.g., An & Gower, 2009; Coté & Simpson, 2000). Television news, especially, has consistently been pointed out for releasing sensational reports. For example, BBC News created its regulation forbidding its journalists from infringing on general citizens' privacy. Television coverage of other disasters has been criticized for focusing on showing deaths, rather than providing objective information about the disasters (Coté & Simpson, 2000). Such problems, in particular, have been discussed by employing the framing theory (e.g. Houston, *et al.*, 2012; Miller & Goidel, 2009; Stock, 2007; Tierney, *et al.*, 2006).

The framing theory has been discussed widely in the domain of media. Framing is an important element because it can influence viewers' thoughts or change their original perspectives on an issue (Entman, 1993; Price, *et al.*, 1995). There is no consensus on the terminology regarding media frames but previous framing studies (Iyengar, 1991; Iyengar & Simon, 1993; Semetko & Valkenburg, 2000) have been widely applied to other studies to date. For example, Iyengar(1991) points out that news tends to cover stories using the episodic frame more than the thematic frame, thereby crippling the role of news in performing in-depth analysis of an incident due to a lack of detailed information. Considering the fact that media frames can be defined inductively depending on the subject of a study, this paper also tries to analyze which media frames were used in disaster

news covering the Sewol ferry disaster by referencing previous studies and adding new types of media frames. Because framing theory is useful to diagnose communication problems during disasters (Entman, 1993), the authors aim to find out how media poorly communicated about the Sewol Ferry disaster.

Furthermore, focusing on major elements of broadcasting news, this paper examines associations between media frames and news sources, between media frames and visuals, respectively. Because news sources exercise considerable influences over media framing (Lasora & Reese, 1990; Tuchman, 1978; Zoch & Turk, 1998), it is crucial to analyze how news sources are associated with media frames. If certain news sources are more used in certain media frames, then it can be inferred that news sources are not fairly used in disaster news, resulting in making unbalanced media reports. In a case such as this, only particular news sources contribute to constructing the news stories, which may mislead the public to recognize issues in a particular perspective, not in a balanced view. This is not ideal for the role of news which should present unbiased information to the public. A strong association between news sources and certain media frames may leave some questions of news objectivity behind. Expanding these discussions, this paper further seeks out how visuals used in news reports are in association with news frames. Although visual news factors have strong influences on viewers' perceptions on issues compared to textual-based news reports (Domke, *et al.*, 2002), little has been noted about visuals when examining broadcasting news.

However, excessive uses of visuals such as camera techniques and computer graphics in news reports may bring out negative effects on maintaining news objectivity (Tuchman, 1978) and confuse viewers about how far the graphics shown in news stories are based on the fact (Shin & Kim, 2006). In this light, examining how those visuals are used in news frames is considerably important in order to examine the ideal role of disaster broadcasting news. Overall, this study aims to broaden discussions about the construction of disaster broadcasting news by examining news frames and associations among news sources, visuals, and news frames.

II. Literature Review

1. Disaster Television News

News helps people receive knowledge (Eveland & Scheufele, 2000). Television news is more influential on people's perception than newspaper reports due to its auditory sound and visual image. It is also written by relatively straightforward words which make people easy to understand (Chaiken & Eagly, 1976).

Television news gains much importance especially when disasters happen because it immediately informs viewers of the emergency situation, causes, and consequences of the incident. Broadcasting organizations produce news after gathering information from the scene of an incident. They disseminate information not only to citizens but also to policy-makers so that they can comprehend the scope of the incident (Miller & Goidel, 2009). People's needs for getting information tend to grow sharply when non-routine events such as disasters

occur because they are interested in getting detailed information about the situation as soon as possible (Tuchman, 1978; Wenger, *et. al.*, 1975). Hence, most people pay attention to disaster news because of their desires to know at firsthand about what is going on. Such people's need to get information in disaster situations and powerful influences of television news imply the ideal role of disaster news that it should abstain from releasing sensational reports and disseminate objective facts to the public.

Studies about disaster news have been constantly conducted, focusing on major elements of news—frames, sources, and visuals. For example, past finding showed that the responsibility frame or the human interest frame was mostly used in disaster news (An & Gower, 2009; Li, 2007). Quarantelli & Wenger(1990) examined disaster news coverage in Japan and the US and found that the both countries covered disasters with inaccuracy and tend to only rely on official sources by and large and exclude unofficial sources, which can transmit only one-sided interpretation with bias. This can cripple objectivity and authenticity in news because journalists should not be neutral or detached from partisanship when reporting news stories (Figdor, 2010). In order to abide by the basic rule of news, journalists should present sources that represent both sides of a certain issue (Martins, *et. al.*, 2013). It has been also noted that overusing camera techniques should be avoided in news (Tuchman, 1978) but numerous close-up shots have been found in news reports (Lee & Bae, 2014), resulting in emotional reactions from viewers (Goldberg, 1993). This paper will discuss these matters one by one.

2. News Frames and Disaster

Framing theory argues that media construct another reality by transmitting information in a certain way. Media can alter audiences' perceptions (D'angelo, 2002) by highlighting specific news scenes while concealing others (Tuchman, 1978). In this sense, media framing deals with how people think about issues (Kim, *et. al.*, 2002).

The framing theory has been studied in diverse ways in the domain of social science. Framing is defined as selecting "some aspects of a perceived reality" to enhance salience "in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation" (Entman, 1993: 53). News frame types are decided depending on what the subject of study is. Semetko & Valkenburg's(2000) study about news frames is one of the most popular studies cited widely in other studies. According to Semetko & Valkenburg(2000), news frames are classified into five types based on news contents: the conflict, human interest, economic consequences, morality, and responsibility. With regard to news forms, Iyengar & Simon(1993) divide news frames into two types: the episodic and thematic. News which employs the episodic frame is likely to approach social issues by highlighting individual cases and evoking dramatic effects, whereas the thematic focuses on social conditions or historical backgrounds of issues in-depth, thereby transmitting information in an analytic approach (Iyengar & Simon, 1993). Contrary to the episodic frame, the thematic frame makes viewers comprehend social issues in a rational way (Iyengar & Simon, 1993). However, the problem of television news is that it tends to overwhelmingly use episodic frames,

which may hard to transmit in-depth information to viewers (Iyengar, 1991).

Media framing research has been widely conducted, particularly about disaster events. Stressing that news constructs realities, Garner (1996) argued that people get to know about disasters from what they have heard or seen from mass media. If media transmit information in a biased way, ordinary citizens would perceive disaster events inappropriately (Tierney, *et. al.*, 2006). Media scholars have dealt with both format-based and content-based news frames. In regard to content-based news frames, An & Gower (2009) found that the attribution of responsibility frame was highly used in disaster news coverage, concluding news media assign criticism to someone about the crisis. The other studies showed that the human interest frame accentuating personal stories or certain events was highly used in US media reports about natural disasters (Houston, *et. al.*, 2012) or in 9/11 terrorist attack media reports (Li, 2007), raising concerns that news did not contain factual information that is helpful to fully understand the disaster.

In addition to such a predominant use of the human interest frame in crisis news, another problem shown in today's disaster news frames is that the excessive use of the episodic frame rather than the thematic (Papacharissi & de Fatima Oliveira, 2008). That is, news concentrates on showing the current situation superficially rather than disseminating preventive messages to people and telling in-depth, analytic information (Houston, *et. al.*, 2012), which is essential for publics to be informed.

3. Role of News Sources in Framing

News sources play an important role in forming news stories and impacting viewers' perceptions. In other words, news sources not only set news agendas but also shape ideologies of a whole society (O'Neill & O'Connor, 2008). In this respect, news sources are the determinant of news stories and public discourse (Hall, *et. al.*, 1978).

However, past studies cast their doubts over heavily using official news sources such as government officials and leaders (Carpenter, 2008; Lawrence, 2000; Lemert, 1989) and belittling unofficial sources, which may lead to top-down communication. Journalists tend to have close relationships with these so-called "elite" sources (Bennett, 1990) by often contacting them and getting news from them. The main reason for journalists' reliance on official sources is because of their lack of time to seek out other sources (Brown, *et. al.*, 1987) but this may endanger news values—diversity and objectivity. The official dominance model, proposed by Lawrence(2000), clearly points out the problem of journalists' dependency on official sources such as political leaders or party operatives who function as primary definers in news stories. On the other hand, unofficial sources are mostly ruled out in news reports, according to the model (Lawrence, 2000). This is problematic because news stories can lack objectivity and diversity (Dimitrova & Stromback, 2012; Entman, 1985) that can be supported by including a lot of news sources holding different opinions on certain issues. Particularly, the country's mainstream media on the Sewol Ferry disaster have come under fire due to their reliances on inconsistent and inaccurate

official sources (i.e., government), while excluding unofficial sources' voices (i.e., citizens). The problem lies on the domestic media's false reports. Without proper filtering, the media parroted the government's announcements that turned out to be incorrect afterwards (Cho, 2014).

The usage of news sources are closely related to news frames. Journalists intentionally use certain news sources in news stories and report those by producing certain frames (D'angelo, 2002). Little research has focused on the association between news sources and news frames in disaster situations. However, past studies which examined news sources along with news frames (e.g. Cho, 2006; Dimitrova & Stromback, 2012) have found out a significant association between the two. For example, Dimitrova & Stromback(2012) concluded that news reports which used campaign operatives or media analysts as sources framed politics as a strategic game whereas news reports that used ordinary citizens as sources framed politics as an issue. The result suggests that politics are described as a strategic game by campaign operatives and media analysts (Dimitrova & Stromback, 2012). On the basis of these studies, an association between news sources and news frames in a catastrophic situation, the Sewol Ferry disaster, should be noted further to broaden discussions about construction of disaster news.

4. Visualization in Disaster News

Expanding upon the existing studies about news frames and news sources, this study further aims to explore how visual formats are presented in disaster broadcasting news. With the advancement of media technology, visualization in television

news has garnered much importance. Moreover, visual effects have been placed a great emphasis on disaster news such as Iraq war and tsunami in southeast Asian countries (Grabe, *et. al.*, 2000). Visuals in news have influences on how viewers interpret the world (Huang & Fahmy, 2013), and moreover, have stronger persuasive powers to viewers than text-based news (Domke, *et. al.*, 2002).

Visual effects in television news such as computer graphics can enhance viewers' understanding of news stories. However, excessive uses of visuals have raised concerns over crippling news objectivity (Shin & Kim, 2006). Caldwell(1994) labeled such worries as *televisuality*, a term that refers to a news embellished with overusing visuals. As Tuchman (1978) noted, journalists should avoid of exaggerating certain images that may harm authenticity and objectivity of news. To maintain objectivity in news coverage, it is ideal for journalists to reflect the reality as it is, while avoiding of employing various camera techniques in news (Tuchman, 1978) which may ultimately bring out visual bias.

Visual elements that will be examined in this study are close-up, subtitles, and computer graphics. These are commonly discussed in relation to sensational reports. First, among shot types of news camera—close-up shot, bust shot, medium shot, and long-shot—extreme close-up shots which present face only can emphasize persons' emotions while not transmitting factual information. However, journalists tend to intentionally use excessive close-up shots in order to attract viewers (Lee & Bae, 2014). Such exaggerated visualization of news may engender emotional reactions to viewers (Goldberg, 1993; Koch, 1990;

Morrow, 1993). In addition, the size of subtitles has been noted in past research in terms of news objectivity. According to Korean Broadcasting Acts, subtitles should be presented 1/4 size of a whole television screen (Baek & Lee, 2013). Applying this rule to disaster news, the current paper evaluated news subtitles which comprise more than 1/4 of a screen can cripple news objectivity. Oversized subtitles are likely to draw viewers' attentions, which hinders their unbiased understandings of news stories. Lastly, computer graphics in news reports are constructed by journalists' subjective perspectives (Lee & Ahn, 2011). In digital era, credibility in news videos is contingent upon media institutions' credibility (Fetveit, 1999), thus viewers can easily believe what media institutions send to them as realities. That being said, unwarranted uses of visuals distort objectivity by producing sensationalism in television news. Following these discussions, in this study specifically, whether each news used close-up shots (i.e., face only, head and shoulders) (Knoche, *et. al.*, 2006) and whether the size of subtitles was more than 1/4 of screen, and whether computer graphics (CG) were used in each news report were examined.

Past studies addressed news visuals and news frames particularly in times of calamity. For example, Moriarty & Shaw(1995) found that over one-third images of news reports about the first Gulf War they examined highlighted war technology such as smart bombs, thus framing news as a mini-drama. They pointed out that such images hindered the public's understanding of the real image of the war. On a similar level, visuals in the Afghan War reports more focused on material

destruction and less focused on the victims, consequently framing the news as technical frames (Fahmy, 2004). It has been noted that visuals dictate news frames (Paterson, 2001) but this may be hard to provide complete information to viewers (Griffin & Lee, 2002). These results showed that visuals function as important elements in news reports. Adding to past studies, this study explores how visualization factors (close-up shots, computer graphics (CG), size of subtitles) that constitute broadcasting news have association with news frames.

III. Research Questions and Hypothesis

Focusing on major elements (frames, sources, and visuals) constructing broadcasting news, this study aims to investigate how news frames are employed in disaster news in South Korea and how news sources and other visual elements are presented in news frames. To solve these questions, this study first examines how news broadcasting organizations describe disaster news stories, particularly regarding the Sewol ferry incident.

RQ1: What frames did South Korean broadcast news organizations employ in their coverage of the Sewol ferry disaster?

Specifically, previous studies (Dimitrova, 2006; Papacharissi & de Fatima Oliveira, 2008) have found that in disaster news stories, the episodic frame was used more than the thematic, which may bring out negative effects on viewers' perceptions and interpretations. When news is reported based on the episodic frame, viewers can

perceive the incident by being subjective. Based on previous studies' conclusions, the following hypothesis was proposed.

H1: The episodic frame was used more than the thematic in the Sewol ferry disaster.

Next, a prevalence of certain sources in news reports—particularly official sources—raises concerns over violating the rule of news that it should abide by. Prior studies (Brown, *et. al.*, 1987; Carpenter, 2008; Dimitrova & Stromback, 2012; Lawrence, 2000; Lemert, 1989; Quarantelli & Wenger, 1990) have shown that news stories have been primarily based on official sources (e.g. government-related officials, government institutions) rather than unofficial sources (e.g. citizens, volunteers), thus forming a top-down communication in news reports. Especially, examining how news sources were used is imperative to consider in the case of Sewol ferry disaster because domestic media were blamed for relying on the government's announcements which turned out to be false afterwards. Most South Korean media did not pay attention to general citizens' voices. Hence, building on previous studies which found out certain news sources were inclined to be used in certain news subjects with bringing out a biased information flow (Cho, 2006), this paper seeks to examine whether certain news sources were used in certain news frames in disaster news.

RQ2: Were news sources differentiated by news frames in the Sewol ferry reports?

Finally, visual effects are additionally examined in this study, given that excessive uses of visuals

in news may bring out emotional reactions to viewers (Goldberg, 1993; Koch, 1990), resulting in endangering news objectivity. Yet, little research has noted about visuals in broadcasting news, particularly about an association between visuals and news frames. As excessive uses of visuals may cripple objectivity in news, this study explores whether an association between visual elements of news and news frames exists in order to find out how visuals contribute to constructing news frames. Therefore, another question was posed:

RQ3: In covering the disaster event of the Sewol ferry, were any differences shown in visual elements depending on types of news frames?

IV. Methods

1. Data Collection

The data used in this paper which conducted a content analysis were broadcasting news stories which were reported from April 16 to April 29, 2014. The data were obtained from the main evening broadcasting news programs of seven South Korean television stations entailing four comprehensive programming channels (TV Chosun, Channel A, JTBC, and MBN) that broadcast various genres of programs including news, documentaries, and entertainment programs. Other analyzed channels

were three major domestic terrestrial broadcasters (SBS, KBS and MBC) which are under restriction of broadcasting commercials. A total of 2,015 news video stories related to the Sewol ferry disaster were found in broadcasting news programs' websites. April 29 is the day when rescue operations had been concluded for a moment and South Korean president officially promised to correct any wrongdoing of the disaster, implying that the first phase of the disaster had come to an end.

News stories used as the primary unit of analysis were defined as "any topic introduced by the anchorman coupled with any report or reports by other correspondents on the same topic and any concluding remarks by the anchorman" (Fowler & Showalter, 1974: 713). Classifying these news stories according to these criteria, this study first aims to examine news frames which illustrate descriptions of news stories and then look over how news sources and visual effects are presented in each news frame.

2. Operational Definition

1) News frames

News frames were divided into format-based news frames and content-based news frames. For the format-based, news frames were coded by two sub-values including the thematic frame and

Table 1. Data overview

Type of channels	Programs	Date	No. of programs (n)
Terrestrial broadcasting channels	SBS News 8	April 16 th -29 th	287
	KBS News 9		296
	MBC News Desk		335
Comprehensive programming channels	JTBC Newsroom		298
	Channel A		239
	MBN News 8		210
	TV Chosun	350	
Total			2,015

episodic (Iyengar, 1991; Iyengar & Simon, 1993). News stories which illustrated the overall situation of the disaster or the causes and consequences of the disaster in depth by offering statistical data or experts' opinions were coded as the thematic news frame. Meanwhile, news stories which did not contain the specific details of the disaster and covered the case without supporting clear data or contextual meanings were coded as the episodic news frame. News stories which were coded as the episodic news frame also did not contain the specific solutions to resolve the disaster, merely raising the risk of the effect of the disaster. Such news stories may ignore important issues of the disaster while focusing on individual cases from a micro-perspective. News stories that are hard to discern the thematic or episodic and other stories that neither belongs to the thematic news frame nor the episodic were coded as "others".

Content-based news frames were coded as eight sub-categories including five news frames: (1) attribution of responsibility (identifies the causes and consequences of the disaster by asking questions such as "does this news story mention about a person or an institution that is in charge of the disaster?"), (2) human interest (emphasizes personal stories with raising emotions such as empathy, anger and sympathy) (3) conflict (focuses on conflicts among individuals, groups, institutions by showing criticisms from divided sides) (4) morality (evaluates the disaster by universal values and moral standards) (5) economic (identifies the disaster from an economic standpoint such as questioning "does this news story mention about the financial damage that the disaster can bring?" or "does this news story mention about the expenses

or costs of the disaster?") (Semetko & Valkenburg, 2000). In addition, this paper added two more content-based news frames after completing a pre-analysis: (6) solution and countermeasures and (7) community-atonement (e.g. "does the news story cover the disaster as a community's problem beyond a human interest?" or "does a news story realize the disaster as a community's matter and mention about the lamentations of people for the loss from the disaster?"). News stories that do not belong to any of these seven frames were coded as (8) others.

2) Incident periods

All news stories examined in this study were divided into two incident periods: April 16 to 19 and April 20 to 29. First, Stories from April 16 to 19 were grouped into the coverage showing the disaster scene. News reports in this period mainly showed the spot of the incident and how the situation was going. The initial rescue operation was delayed due to the government's slow response. News stories from April 20 to 29 were grouped into the second period named as the response to the disaster. April 20 marks the date when the rescue teams directly entered in the Sewol ferry for the first time and started finding the dead bodies in there. Thus, news stories from this date began to focus on how rescue operations went along. An investigation headquarter was also reorganized on the same day. Then, on April 29, South Korean president Park Geun-hye released a statement of apology at a cabinet meeting and a group memorial altar was opened to the public, hinting that the initial chapter of the disaster came to an end. This paper therefore considered

that it is proper to choose April 29 as an end date for analyzing news reports.

3) News sources

News sources are subjects providing information to journalists, and include not only people but also documents or institutions. This study defines news sources based on Carpenter's(2008) study, which divided news sources into two sub-categories (official sources and unofficial sources). Official sources typically refer to government-related officials or people who are affiliated with official institutions. Unofficial sources, on the other hand, include general citizens and non-institutional representatives (Carpenter, 2008). This paper first coded news sources as fifteen sub-categories and then grouped these into five categories.

(1) As for government-related official sources, government agencies, members of the National Assembly, or political parties are included. (2) General citizens consist of civic groups (e.g. NGOs) and other average citizens. Although Carpenter(2008) put non-profit organizations into official sources, this paper classified those kinds of organizations into general citizens, not government-related official sources, given that non-profit organizations are voices that represent bottom-to-top communication. In addition to these two kinds of sub-categories, this paper added three more types of news sources: (3) perpetrators, (4) victims of the Sewol disaster, and (5) experts. Victims of the disaster include people who were rescued from the disaster, the families of the victims, and others who suffered from the disaster directly or indirectly and possibly experienced trauma (e.g. other students

who go to the same high school that most of the victims of the disaster went). Experts are separately apart from other sub-categories. Such a classification is also different from Carpenter's (2008) study that classified experts into official sources. This is because experts, here, are from either private organizations such as civilian rescue divers or official institutions such as professors at the universities. This paper regarded that experts are hard to be divided into the existing sub-categories only for what institutions they belong to, thus should be treated as another separate news sources that hold professional knowledge.

One major news source used in each news story was coded in this paper. When more than two news sources were used in each news story, one source that accounted for the largest portion of news sources in the news was coded.

4) Visual elements

Visual elements (close-up, subtitles, computer graphics) of news were additionally measured. Following past research (Knoche, *et. al.*, 2006), close-up shots included in this study were extreme close-up (face only) and close-up shots (head and shoulders). If a news story contains either of the two close-up shots, coders then measured to what extent the close-up shots presented sensational and dramatic scenes on a 5-point scale. In addition, the size of subtitles were coded. In the codebook, the size of subtitles was classified into four factors: less than 1/4 of screen, more than 1/4 of screen and within 1/2 of screen, more than 1/2 of screen, and 1/4 of screen (Baek & Lee, 2013). These subsets are based on

Korean Broadcasting Acts that subtitles of public service campaign should be presented within 1/4 size of a whole screen. Finally, whether each news story contains computer graphics (CG) were further analyzed.

3. Coder Reliability and Data Analysis

Four well-trained coders analyzed all the news stories independently. For the inter-coder reliability test, almost 10 percent of the total data (190 news stories) that were randomly selected were coded. The inter-coder reliability was measured at 0.78 which is above acceptable level (Landis & Koch, 1977) of Fleiss Kappa used to measure more than three coders' reliability. This study mainly investigated associations between news frames and sources, and between news frames and visual elements by using cross-tabulation and a chi-square test. News frames and news sources were single coded by coders with their judgments that how each item of those variables is mainly used in one news story with the highest proportion.

V. Findings

This paper first examined news frames (format-based news frames and content-based news frames) that each South Korean television news story depicts. Overall, the most common format-based coverage frame in disaster news stories was the episodic (n=1051, 52.2%), followed by the thematic (n=910, 45.2%). To verify whether this finding is statistically significant, non-parametric statistics was used and supported the result ($\chi^2 = 866.812, p < .001$). Although the results

showed not so much differences between the two frames, H1 was supported, showing that news reported the incident in an event-oriented, dramatic way rather than in an in-depth manner with providing specific details. Next, for the content-based news frames, the attribution of the responsibility frame was the most common in disaster news (n=897, 44.5%), followed by the human interest (n=493, 24.5%), solution and countermeasures (n=154, 7.6%), conflict (n=123, 6.1%), morality (n=112, 5.6%), community-atonement (n=42, 2.1%), and economic (n=29, 1.4%). News stories coded as others (n=165, 8.2%) were mostly live coverage which entail explanations about the site of the incident.

1. News Channel Types vs. News Frames

An association between news channel types and news frames were significant ($\chi^2 = 18.398, p < .001$ for format-based frames; $\chi^2 = 26.712, p < .001$ for content-based frames). Regarding format-based news frames, in terrestrial broadcasting news, the difference between the use of the thematic frame (n=462, 50.3%) and that of the episodic frame (n=432, 47.1%) was not that much and the thematic frame was used slightly more than the episodic frame. However, in comprehensive programming news, the episodic was used more (n=619, 56.4%) than the thematic (n=448, 40.8%).

When it comes to content-based news formats, in terrestrial broadcasting news, the attribution of responsibility frame was the most frequently used (n=432, 47.1%) compared to other frames. The human interest frame was the second most used (n=199, 21.7%). Other frames such as the conflict, morality, economic, solution and countermeasures,

Table 2. Associations between news channels and news frames

Count %	News frames												
	Format-based news frames ^a				Content-based news frames ^b								
News Channels	F1	F2	F3	Total	C1	C2	C3	C4	C5	C6	C7	C8	Total
Terrestrial	462	432	24	918	432	199	49	50	13	58	29	88	918
Broadcasting News	50.3	47.1	2.6	100.0	47.1	21.7	5.3	5.4	1.4	6.3	3.2	9.6	100.0
Comprehensive	448	619	30	1097	465	294	74	62	16	96	13	77	1097
Programming News	40.8	56.4	2.7	100.0	42.4	26.8	6.7	5.7	1.5	8.8	1.2	7.0	100.0
Total	910	1051	54	2015	897	493	123	112	29	154	42	165	2015
	45.2	52.2	2.7	100.0	44.5	24.5	6.1	5.6	1.4	7.6	2.1	8.2	100.0

Note. F1 = Thematic; F2 = Episodic; F3 = Others; C1 = Attribution of responsibility; C2 = Human interest; C3 = Conflict; C4 = Morality; C5 = Economic; C6 = Solution and countermeasures; C7 = Community-atonement; C8 = Others.

a Cell entries are the percentage of the total (N = 2015); $\chi^2 = 18,398$, $p < .001$

b Cell entries are the percentage of the total (N = 2015); $\chi^2 = 26,712$, $p < .001$

community-atonement, and others were almost evenly used with small differences. Meanwhile, in comprehensive programming news, the attribution of responsibility frame among content-based news frames was used the most (n=465, 42.4%) followed by the human interest (n=294, 26.8%). Other frames except these two were almost equally used in comprehensive programming news. The interesting finding in here is that comprehensive programming news hardly used the community-atonement n=13, 1.2%), a unique frame that was found in the Sewol Ferry disaster news. Terrestrial broadcasting news also used the community-atonement frame not that much (n=29, 3.2%) but slightly used more than comprehensive programming news.

2. Incident Periods vs. News Frames

〈Table 3〉 shows an association between incident periods and format-based news frames. In the

scene of the disaster period between April 16 to 19, the thematic frame was more used (n=374, 61.0%) than the episodic (n=206, 33.6%). In contrast, in the response to the disaster period between April 20 to 29, the episodic frame (n=1051, 52.2%) was more frequently used than the thematic (n=536, 38.2%). But there was no statistically significant difference between the incident period and content-based news frames ($\chi^2 = 131.183$, $p = n.s.$).

3. News Frames vs. News Sources

Government-related official sources were the most commonly used in all of the format-based news frames. Specifically, in the thematic frame, experts appeared as the second most common news sources (n=101, 23.6%) following government-related official sources (n=256, 59.8%). Others such as general citizens and victims were hardly used in the thematic (n=5, 1.2% and n=25, 5.8% for each). In the episodic frame, however, general

Table 3. Associations between incident periods and format-based news frames

Incident periods	Format-based news frames							
	Thematic		Episodic		Others		Total	
	n	%	n	%	n	%	n	%
Scene of disaster (April 16 ~ April 19)	374	61.0	206	33.6	33	5.4	613	100.0
Response to disaster (April 20 ~ April 29)	536	38.2	845	60.3	21	1.5	1402	100.0
Total	910	45.2	1051	52.2	54	2.7	2015	100.0

Cell entries are the percentage of the total (N = 2015); $c^2 = 131.183$, $p < .001$

citizens and victims were used more frequently than in thematic (n=64, 9.2% and n=149, 21.4% for each). This result shows that general citizens or victims were used more in news stories that evoked emotional reactions by focusing on individual cases than in news stories that approach the disaster in an analytical manner. Journalists highlighted personal stories by using the episodic frame.

Of the content-based news frames, government-related official sources were used the most in all of the frames except in the human interest and community atonement frame. In the attribution of responsibility frame, government-related official sources were most frequently used as news sources (n=260, 48.1%) followed by perpetrators (n=164, 30.4%) and experts (n=82, 15.2%). Victims

and general citizens accounted for a small portion of the attribution of responsibility frame (n=27, 5.0% and n=7, 1.3% for each). However, victims were frequently used as news sources in the human interest frame (n=118, 41.7%) and general citizens were also relatively commonly used (n=55, 19.4%). Perpetrators as news sources were used the least in the human interest frame (n=4, 1.4%).

In the conflict frame, government-related official sources were mostly used (n=33, 58.9%) followed by victims (n=13, 23.2%). This finding illustrates the harsh conflict between the government and victims (families of the missing representatively) was frequently depicted in disaster news. During the disaster, families of the missing required the government to rescue people trapped in the ferry as soon as possible but the

Table 4. Associations between news frames and news sources

News Frames		Count	News Sources				Total
		%	Government-related official sources	General citizens	Perpetrators	Victims	
Format-based news frames ^a	Thematic	256 59.8	5 1.2	41 9.6	25 5.8	101 23.6	428 100.0
	Episodic	283 40.6	64 9.2	134 19.2	149 21.4	67 9.6	697 100.0
	Others	7 43.8	3 18.8	0 0.0	2 12.5	4 25.0	16 100.0
	Total	546 47.9	72 6.3	175 15.3	176 15.4	172 15.1	1141 100.0
Content-based news frames ^b	Attribution of responsibility	260 48.1	7 1.3	164 30.4	27 5.0	82 15.2	540 100.0
	Human interest	75 26.5	55 19.4	4 1.4	118 41.7	31 11.0	283 100.0
	Conflict	33 58.9	2 3.6	1 1.8	13 23.2	7 12.5	56 100.0
	Morality	30 69.8	1 2.3	2 4.7	4 9.3	6 14.0	43 100.0
	Economic	5 50.0	4 40.0	0 0.0	0 0.0	1 10.0	10 100.0
	Solution and countermeasures	82 86.3	0 0.0	0 0.0	5 5.3	8 8.4	95 100.0
	Community's atonement	1 12.5	2 25.0	0 0.0	1 12.5	4 50.0	8 100.0
	Others	60 58.6	1 0.9	4 3.8	8 7.5	33 31.1	106 100.0
	Total	546 47.9	72 6.3	175 15.3	176 15.4	172 15.1	1141 100.0

communication between them not went well, which ultimately fell into the strife. In the morality frame, which makes moral judgments, government-related official sources were highly used (n=30, 69.8%). Next, in the economic frame, government-related official sources and general citizens were mostly used (n=5, 50% and n=4, 40%, respectively) but those numbers were not that high. One of the noticeable results is that government-related officials were mostly used as news sources in the solution and countermeasures frame (n=82, 86.3%). This is because the government is the only one troubleshooter who has to come up with proper countermeasures. Lastly, in the community-atonement, experts are used as news sources the most (n=4, 50%) but it stood at an only small number of news stories. An example of this case in the current findings was a news story about a collective trauma with using the University of Maryland research team in the US as news sources. This example shows that the news story used experts when explaining about an agony that the community shares.

4. News Frames vs. News Visuals

Among 2,015 analyzed news stories, 1,896 news stories included close-up shots while all of the news stories contained subtitles. Of the total reports, 1,968 reports used subtitles within 1/4 size of the screen, 39 stories used subtitles more than 1/4 size of the screen and within 1/2 of screen while only 7 stories used subtitles more than 1/2 size of the screen. News stories which used computer graphics totaled 580.

The significant association was found between sensational extent of close-up shots in news

stories and news frames ($\chi^2 = 77.034$, $p < .001$ for format-based news frames; $\chi^2 = 116.592$, $p < .001$ for content-based news frames). The results for format-based news frames indicate that sensational close-up shots were included in the episodic frame (n=35, 3.4%) while no other sensational close-up shots were found in the thematic. Of the content-based news frames, the human interest frame contained dramatic close-up shots with the most high percentage (n=31, 6.5%). These findings support the past studies that the episodic frame and the human interest frame evoke dramatic effects by emphasizing emotions (Iyengar & Simon, 1993; Valkenburg, *et. al.*, 1999).

The association between the size of news subtitles and format-based news frames was significant ($\chi^2 = 46.689$, $p < .001$). Both the thematic frame and the episodic mostly used subtitles less than 1/4 size of a scene (n=888, 97.6% for thematic frame; n=1,028, 97.8% for episodic frame). This finding indicates that although the statistical significance was proved in the size of subtitles, it was hard to find any clear differences. On the other hand, the association between the size of subtitles and content-based news frames was not statistically significant.

The association between the usage of CG and the format-based news frame was significant ($\chi^2 = 14.701$, $p < .05$) and the result for the analysis suggests that the thematic frame of the format-based news frames relatively used less CG (n=235, 25.8%) than the episodic frame (n=336, 32.1%). The association between use of CG and the content-based news frame also showed significance ($\chi^2 = 181.521$, $p < .001$), with almost half of the attribution of responsibility frame used CG (n=377,

Table 5. Associations between content-based news frames and CG

Content-based news frames	Count	CG	
	%	Used	No used
Attribution of responsibility	377 42,0	520 58,0	894 100,0
Human interest	79 16,0	414 84,0	493 100,0
Conflict	9 7,3	114 92,7	123 100,0
Morality	12 10,7	100 89,3	112 100,0
Economic	7 24,1	22 75,9	29 100,0
Solution and countermeasures	32 20,8	122 79,2	154 100,0
Community's atonement	3 7,1	39 92,9	42 100,0
Others	61 37,0	104 63,0	165 100,0
Total	580	1435	2015

Cell entries are the percentage of the total ($N = 2015$); $\chi^2 = 181,521$, $p < .001$

42,2%). Results for other content-based news frames are described as below.

VI. Conclusion and Discussion

By conducting the content analysis to examine South Korean television news coverage of the Sewol Ferry disaster, this study focused on news frames and examined those with television channels and event periods. This study also made an attempt to determine associations 1) between news frames and news sources, and 2) between news frames and visuals. This paper presumed that the reasons for criticisms facing the South Korean news stemmed from uses of certain media frames, a prevalence of official sources, and excessive uses of visuals (i.e., close-up), which cripple objectivity and diversity in news. The underlying assumption here is that an excessive use of the episodic frame creates problems in that it does not focus on the essence of the incident (Iyengar, 1991). A prevalence of certain news

sources—particularly official sources—would also mislead viewers to perceive the incident. If official sources are used too much in news, viewers can only hear what officials say but cannot hear unofficial voices from news stories. (Hall, *et. al.*, 1978; O'Neill & O'Connor, 2008). Unlike some studies that did not consider news visuals when examining disaster broadcasting news, this paper further examined how certain visual elements were distinguishably used in certain news frames, as an attempt to broaden frame discussions.

RQ1 asked how news frames are employed in South Korean television news on the Sewol ferry disaster. Specifically, this paper presumed that of format-based news frames, the episodic would be more used in the news coverages than the thematic as suggested by H1. The result shows that H1 is supported, but the difference between the frequency of the thematic frame and the episodic frame was not that much. A person's story was relatively not well-notified because

full-out rescue operations were delayed right after the disaster occurred, thus making news stories be focused on analyzing the process of the rescue operations. Also, the news stories analyzed in this study largely covered the initial phase of the disaster.

However, television news still engenders emotional responses and dramatic effects by using individual episodes, as previous studies on crisis news coverage concluded (Dimitrova, 2006; Papacharissi & de Fatima Oliveira, 2008). Of content-based frames, the attribution of responsibility frame was used the most, consistent with the past finding (An & Gower, 2009). This result suggests that television news does not focus on its power to deliver either preventive messages or possible countermeasures of the disaster to the viewers, as previous studies pointed out (Coombs, 2007; Liu, 2009), but instead merely focuses on finding out who takes responsibility for the disaster. Other content-based news frames were found in news stories in the order of predominance: human interest, solution and countermeasures, conflict, morality, community-atonement, and economic. The results imply that the human interest frame focusing on personal cases is excessively presented in news reports. Among news stories coded as "others", some commonly show the scene of the disaster and explain the then situation. Based on this finding, this paper inductively concludes that another news frame can be separately named as *depiction of scene frame* in disaster news stories.

Regarding an association between news frames and South Korea's news channel types, an interesting result was found. The community-

atonement frame of content-based frames was more used in terrestrial broadcasting news channels than comprehensive programming channels. This result implies that terrestrial broadcasting news channels tend to recognize the disaster as our concern and take the matter to the whole society. However, other news frames such as the episodic frame and the human interest were used more in comprehensive programming channels than in terrestrial broadcasting news. The result of an association between incident periods and format-based news frames shows that the initial period (scene of disaster) used the thematic frame with considerable amount whereas the second period (response to disaster) used the episodic more than the thematic. This indicates that news stories tend to report individual episodes while disseminating sensational reports to viewers as time passes, lending credence to past findings (Fahmy, *et. al.*, 2007). Journalists would have difficulties in accessing victims and disaster areas, right after the incident occurred, and tend to tell stories about the whole situation of the disaster by relying on scenes provided by helicopters and airplanes. Once they gained accessibility, however, emotion-focused news is frequently reported (Fahmy, *et. al.*, 2007).

Secondly, RQ2 raises the question whether an association between news frames and news sources exists. In the thematic frame, government-related official sources and experts were considerably used. Such result indicates journalists heavily relied on those sources as primary definers when reporting the incident in an analytical manner. Another interesting result in here is that general citizens and victims were comparatively much

used in the episodic frame which focuses on evoking emotion than in the thematic. A similar finding was also discovered in content-based frames. Only in the human interest frame and community atonement, general citizens and victims were more used as news sources than government-related official sources. Taken all together, these results suggest that a clear association between news sources and news frames was found, such that uses of general citizens and victims as news sources were employed in certain news frames as the government-related officials were distinguishably used in other news frames. In this sense, news sources are used to contributing to forming certain news frames, which may endanger maintaining news objectivity and diversity.

Lastly, this study answered RQ3 by finding that some types of visual elements (close-up shots, the size of subtitles, and CG) were used more in certain news frames. News which used the episodic frame and the human interest frame contained close-up shots evoking dramatic effects and personal emotions. These results are in line with features of the episodic frame and the human interest frame which highlight personal emotions so that those can endanger news objectivity (Iyengar & Simon, 1993). However, there were no clear differences in usages of large-sized subtitles in types of format-based news frames, given that the size of most subtitles used in news reports were within 1/4 size of the screen, which obeys the recommended guidelines of Korean Broadcasting Acts.

Regarding the usage of computer graphics, the episodic frame used CGs with more percentages

than the thematic. Hence, distinguishable features of the episodic frame again receive attention that the visuals are excessively used, resulting in public's abilities to understand the news in a distorted way. The usage of CG can be used to describe news in sensational and superficial manners, with containing journalists' subjective perspectives (Lee & Ahn, 2011). Such sensational news practice, *infotainment* in other words, may place production style over substantive information (Fiske, 1992) so that the news containing graphics may bring out arousal effect to viewers (Lang, *et. al.*, 1998). Particularly, based on the paper's results, episodic disaster news may excessively use CG effects in order to induce emotional and arousal effects to viewers, thus making them unable to receive complete information (Griffin & Lee, 2002). This kind of production style in disaster news may construct the news in more an event-focused way, thus violating news objectivity. Of content-based news frames, the attribution of responsibility frame used CG the most. The results imply that South Korean news excessively uses CG in disaster incidents in order to only find out who is in charge of the disaster. Although the Sewol case is a different type incident from other analyzed topics such as war in previous research (Fahmy, 2004; Moriarty & Shaw, 1995), less focusing on the victims still remains common in this paper and those studies.

Overall, this study examined disaster news frames and found associations between frames and sources, and between frames and visuals. The results of this paper indicate that particular frames have been more used in disaster news and strong associations were shown between sources

and frames types. Moreover, by looking into visuals along with frames, this paper expanded discussions about broadcasting disaster news. The overall results in this study indicate problems in terms of the role of news because news, ideally, should not only keep a balanced view when it deals with the incident but also contribute to disseminating objective information of the event to the public. This paper took a step further toward looking at the association of news sources and news frames under consideration that problems of disaster news underlie in biased use of certain news sources. If certain sources are used to construct news stories especially when disaster happens, it may be hard for viewers to obtain balanced information. Excessive uses of visuals are also associated with news frames, which may bring out detrimental effect on news objectivity by evoking dramatic effects and confusing news viewers. Future research can examine news visuals in a more detailed way and find out other strong associations between news visuals and factors that constitute news reports.

This study contains limitations. First, it examined part of the whole news reports on the Sewol Ferry disaster, which could be hard to generalize that this study's findings can explain the whole Sewol Ferry case. That is, news coverages reported after April 29 could have contained different frames, visual elements, and news sources. Second, visuals were not specifically explored and the association between visuals and frames was only examined in this study. As can be seen in Lee & Ahn's(2011) study, future studies can concentrate on television news computer graphics when discussing disaster news. Third,

types of frames in disaster news could be further examined with focusing on other incidents. Because this study only examined the Sewol Ferry case, other incidents such as man-made disasters or natural disasters could be further examined. In addition, future studies can compare news coverages on different types of disasters.

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재난 방송 뉴스 분석

- 세월호 재난 사고를 중심으로 -

국문초록 이 연구는 세월호 재난 사고를 보도한 한국 방송 뉴스의 주요 구성요소 (프레임, 정보원, 시각적 요소)를 주제로, 뉴스 프레임을 중심으로 각 구성요소가 방송뉴스에 어떻게 구현되고 있는지를 살펴 보고자했다. 이를 연구하기 위해 지상파 방송뉴스 (KBS, SBS, MBC)와 종합편성채널 (TV 조선, 채널 A, JTBC, MBN)의 메인뉴스를 대상으로 내용분석을 진행하였다. 연구결과, 대부분의 프레임에서는 정부와 관련된 공식적 정보원이 가장 많이 사용된 반면, 일화적, 인간적 흥미, 공동체 속죄 프레임에서는 일반 시민들과 세월호 사고 희생자들이 정보원으로 가장 많이 사용되었다. 또한, 클로즈업은 일화적, 인간적 흥미 프레임에 가장 많이 사용되었고 컴퓨터그래픽(CG)은 일화적, 책임 귀인 프레임에서 많이 사용되었다. 이 내용을 토대로 저자들은 한국 방송 재난 뉴스의 객관성 문제에 대한 논의를 다양한 관점으로 확대해나갈 수 있음을 기대한다.

주제어 : 재난 뉴스, 뉴스 프레임, 뉴스 정보원, 뉴스 시각적 요소

Profiles **Yung Wook Kim** : He received his Ph.D. from University of Florida(1999). He is a professor at Ewha Womans University, where he teaches crisis management, risk communication and conflict resolution. His current research focuses on the role of communication and culture in the context of risk, health, crises and conflicts. He taught at Illinois State University prior to the current position. He also was a Fulbright Exchange Professor at Program on Negotiation at Harvard Law School and a visiting professor at Gent University of Belgium and Nanyang Technological University of Singapore(kimyw@ewha.ac.kr). **Ji Young Lee** : She received her B.A. and M.A. from Ewha Womans University, Seoul, South Korea. Currently, she is a Ph.D. student at S.I. Newhouse Public Communications in Syracuse University, New York, United States. Her main research interests are new media, interactive media, disaster communication, and social psychology(jlee08@syr.edu).