

FRAMING AS A DYNAMIC PROCESS: A STUDY OF U.S. PRESS COVERAGE OF THE SARS EPIDEMIC

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ABSTRACT

This study examined from a dynamic perspective how the New York Times covered the SARS Epidemic. Based on a two-dimensional model, the study revealed that during the life span of the SARS Epidemic (March 2003 to January 2004), the newspaper employed a frame-changing strategy on both the time and space dimensions to maintain the salience of the event. An overwhelming majority of the stories employed the core frames, which were the frames that originally registered the event on the news agenda. The data also revealed that during the 11-month period, the newspaper shifted its focus on the core frame combinations, which further supported the role of the frame-changing strategy in the coverage of a long-lasting event.

INTRODUCTION

The SARS epidemic was a tragedy that alerted the whole world about the “vulnerability of global health systems” (Chang, Salmon, Lee, Choi, & Zeldes, 2004). Eventually claiming more than 800 lives throughout the world (WHO, 2003, August 15), the disease remained ignored for almost four months until international news media reported it extensively following a SARS warning by the WHO in March 2003 (WHO, 2003, March 12). Due to the lack of human knowledge about the disease as well as the way in which coronavirus, later known as the cause of SARS, was transmitted, the news media closely watched the development of the epidemic during the following months. Studies have been conducted to analyze the content of SARS coverage from a static perspective (e.g., Chang, Salmon, Lee, Choi, & Zeldes, 2004; Luther & Zhou, 2005). However, the Epidemic remained on the media agenda for nearly a year. In order to keep the public’s interest in an event over such a long period of time, the media have to employ strategies to keep the topic refreshed. This study examined the media portrayal of the SARS epidemic as a dynamic process.

LITERATURE REVIEW

Media framing refers to the process in which the media select and package ongoing events and issues (Entman, 1993; Iyengar, 1991; Ryan & Sim, 1990; Schon & Rein, 1994). The concept of framing involves two levels of selection, selection for inclusion and selection for emphasis. Because there are multiple aspects of a certain news event or issue, but news holes are limited, only certain facets of the event or issue can be included in a news story. Among the aspects included in a news story, some receive more emphasis than others, thus constituting the dominant frames. It was through the selection of these elements for inclusion and emphasis that media frames “promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation” (Entman, 1993, p. 52).

The way a news event or issue is framed is influenced by forces ranging from gatekeepers at various levels, to ideology (Shoemaker & Reese, 1991). Although news events and issues are presented as a “constructed reality” (Turk & Franklin, 1987, p. 30), how an event or issue is framed has a considerable impact on people’s perception of social reality (e.g., McCombs and Reynolds, 2002; Tewksbury, Jones, Peske, Raymond, & Vig, 2000; Valkenburg, Semetko, & DeVreese, 1999). During times of crisis, particularly, the media become an almost exclusive source of information for the public, as people seek from the media for information, explanations, and interpretations (Graber, 1980).

However, in framing research news frames are often treated from a static perspective. The fact is that as a news event develops, the media tend to highlight different aspects of the event to fulfill media functions at different stages. Graber (1980), for example, identified three stages of media coverage as a crisis develops: providing accurate information to relieve uncertainty and calm the public during the first stage, assessing the crisis during the second stage, and contextualizing the crisis during the last stage. Likewise, Ungar (1998) suggested that the media might change framing strategies under certain circumstances. For instance, when a crisis becomes “unpredictable and potentially threatening” (p. 36), instead of providing merely hair-lifting facts, the media may frame the event in such a way as to contain the situation and console the public. Nevertheless, little is known on the process during which the media change their framing strategies.

Another limitation of traditional framing research is the lack of generalizability of framing scales. Because each news event or issue is unique, there has been little agreement on which frames to study and even less agreement on the categories that each frame constitutes, not to mention the difficulty to develop exhaustive and mutually exclusive categories (Chyi & McCombs).

A recent attempt to liberate framing research from issue-specific limitations from a dynamic perspective is a two-dimension measurement scheme that takes into account the media focus on both the space and time dimensions (Chyi & McCombs, 2004). Chyi & McCombs identified five categories on the space dimension, which are individual, community, regional, societal, and international. In addition, they identified three categories on the time dimension, past, present, and future. They proposed that during the life span of a news issue or event, the media would adopt a frame-changing strategy to keep the event or issue salient. Based on their analysis of the Columbine School Shooting in the *New York Times*, Chyi & McCombs (2004) found that the media employed combinations of different frames on the space and time dimensions to keep the event on the media agenda. However, only a quarter of the total coverage adopted the core frames, the frames that were relevant to the nature of the event and “initially propelled” the event onto the news (p. 31). The majority of the news coverage used combinations of extended frames that changed over time. It was not clear why the newspaper relied more heavily on extended frames than the core frames when packaging the event. More extensive testing of the scheme is needed to establish generalizability of the scheme in framing research.

This study tested Chyi and McCombs’s two-dimensional scheme (2004) in the coverage of a multi-wave international event in the *New York Times*. The original scheme was used to examine the coverage of the Columbine School shooting, an event that attracted a high level of media attention for two weeks after its occurrence, and remained on the media agenda for approximately another two weeks with diminishing media attention. The SARS epidemic, however, was a more complicated event with multiple waves during its life span. First, there was the explosion of the disease in the southern Province of Guangdong at the beginning of 2003.

After the WHO was informed of the case in Vietnam and named the disease SARS in March 2003, there was a second wave of the epidemic around the world. Several months later, after the WHO announced the disease was contained, another case was identified in a laboratory in Singapore. This new case aroused public unease in some parts of the world. Finally, as the winter drew close in China, the public were reminded about the first SARS case in November 2002 and warned about the resurgence of the disease. Not unexpectedly, a new case was confirmed in January 2004 (Single SARS case confirmed, 2004). This study tested whether Chyi and McCombs's scheme could be applied to the coverage of such a complicated event in the same newspaper.

Based on Chyi and McCombs's two-dimensional scheme (2004), this study asked the following research questions:

RQ1: How were the SARS stories distributed in the *New York Times* during the life span of the epidemic?

RO2: How did SARS coverage change on the space dimension?

RQ3: How did SARS coverage change on the time dimension?

RQ4: How was the use of space frames correlated with the use of time frames?

METHOD

Sample

This study employed the method of content analysis to reveal the framing pattern during the life span of the SARS epidemic as a news event. The Lexis-Nexis database was searched using a keyword for SARS or Severe Acute Respiratory Syndrome in the *New York Times* between March 2003 and January 2004. The *New York Times* was selected based on its widely recognized leading role in covering international news. The WHO issued its first global alert about the disease in March 2003, which was followed by a worldwide media focus on the outbreak. The media attention gradually shifted away from the epidemic after the WHO announced that the disease was globally contained in June 2003 (WHO, 2003, July 5). However, the epidemic maintained its salience on the media agenda until January 2004, largely due to some sporadic cases in various parts of Asia in the following months. After January 2004, SARS was mostly mentioned in stories about the later spreading avian influenza (commonly known as bird flu).

The keyword search yielded 1,098 stories from the database. A sample of 140 stories was constructed using the systematic sampling method.

Coding Instrument

The coding instrument in this study was borrowed from the scales by Chyi and McCombs (2004). The coding unit is a story. Each story was coded individually on the *date of publication*, the *space* dimension, and the *time* dimension. The space dimension included five categories. A story was coded in the individual category if it emphasized individual SARS patients, reactions from their families or friends, or contextual information about individual SARS cases or

probable cases without referring to a larger area related to the cases. A story was in the community category if it emphasized the SARS situation in a local area, such as a large hospital, a town or a small city. A story was in the regional category if it emphasized the situation in a large metropolitan such as Toronto or Beijing, a special region such as Hong Kong, a province/state, or a large area that is within the border of a certain country. The national category was a slight variation from Chyi and McCombs's (2004) societal level. A story was in this category if it emphasized the situation within a specific country. Finally, a story was in the international category if it emphasized the situation across national borders, e.g., SARS research led by the WHO.

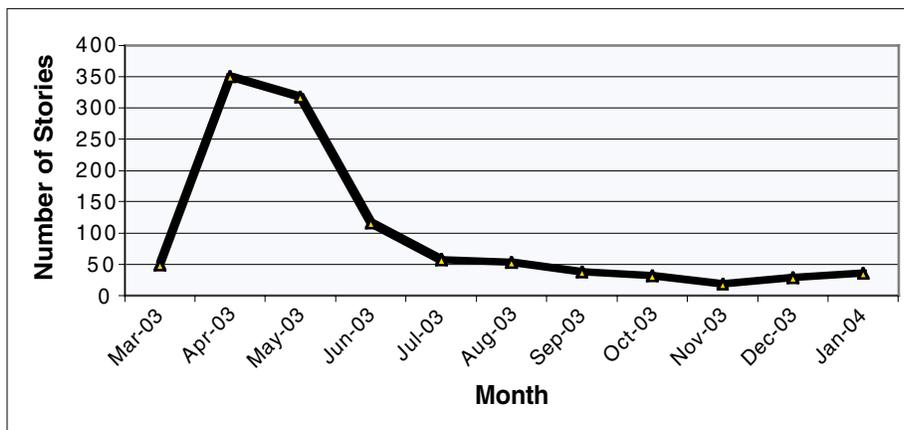
The *time* dimension included three categories: past, present, and future. A story was coded in the past category if it mainly provided historical background or traced relevant events in the history, such as influenza or AIDS. A story was in the present category if it focused on updates of the ongoing SARS epidemic. A story was in the future category if it made predictions about further developments about the situation, proposed actions to be taken, or evaluated future impacts of the event, including preventive procedures and proposals for future medical research.

Inter-coder Reliability Check

A graduate student and the researcher participated in an inter-coder reliability check. A random sample of 30 stories was constructed using the remaining stories in the sampling frame after the original sample was selected. The two coders coded independently by using a coding protocol prepared by the researcher, which provided detailed instructions and definitions for the variables. The Holsti's inter-coder reliability for all the variables fell within the highly satisfactory range of .87 to 1.00 (Holsti, 1969). Specifically, the two coders reached a total agreement on story placement and the time dimension, and agreed on 87 percent of the coding on the space dimension. The graduate student coded all the 140 stories in the sample.

FINDINGS

The first research question asked how the SARS stories were distributed over time. As displayed in Figure I, a total of 1,098 articles were published on the SARS epidemic over the 11 months under analysis. After picking up the topic on March 16, 2003, the newspaper cast intensive



**FIGURE I. SARS COVERAGE IN THE NEW YORK TIMES
(MARCH 2003 – JAN. 2004, N=1,098)**

attention on the event in April and May 2003, publishing an average of more than 10 articles about the outbreak on a daily basis. However, the amount of coverage suddenly dropped in June. After July 2003, when the WHO announced that the whole world had conquered SARS, the media focus gradually shifted away from the epidemic, with coverage reaching the lowest point in November 2003. Slightly more SARS stories appeared around the turn of 2004, partly due to the widespread suspect about a revival of the disease during the winter months.

Research question two asked how the framing of the SARS epidemic changed over time on the space dimension. The data suggested that international frames were the dominant frames on the space dimension, alone accounting for nearly half (42.9%) of the total. One out of three stories (36.4%) employed a national frame, and another 13.6 percent of the articles adopted a regional frame. Very few stories used a frame at the individual (5%) or community level (2.1%).

A closer examination of the three dominant space frames revealed a changing pattern over time. While international and national frames apparently led the coverage of the SARS epidemic during the 11-month period, there was no clear-cut tendency in frame-changing on the space dimension. The whole framing process featured a zigzag path at all three leading levels (Figure II). International frames were the mostly frequently adopted frames when the event first entered the media agenda in March 2003. However, the percentage of international frames in total continuously decreased until it reached an all-time low point in July, accounting for only 30 percent of the total. There was a dramatic increase in the use of international frames in August and September 2003, indicating that the media focus was shifted back to discussion in a broader global context. The percentage of international frames suddenly dropped during October and November, but regained momentum in January 2004, reaching another peak of 75 percent of the total.

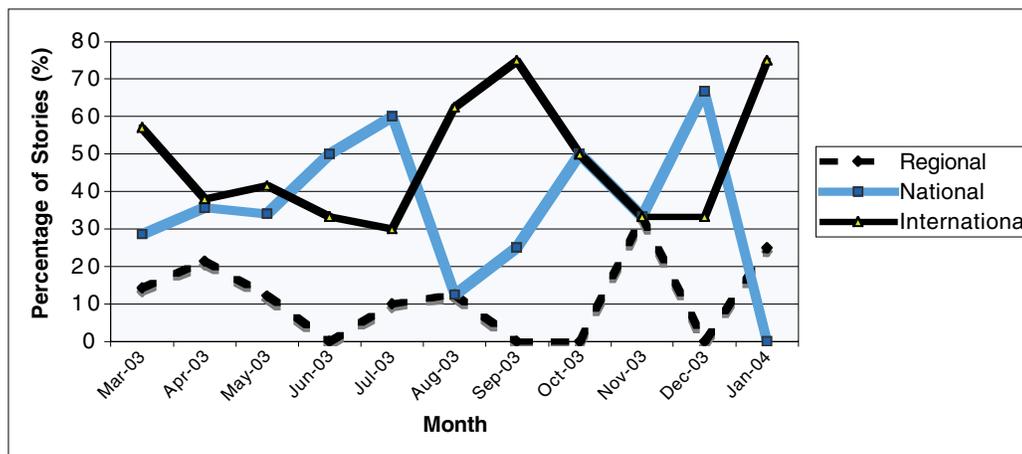


FIGURE II. FRAME-CHANGING ON THE SPACE DIMENSION (N=130)

The overall pattern of international and national frames suggested that the two types of frames complemented each other. Although not a leading frame at the very beginning, national frames gradually gained salience during the first few months of the SARS Epidemic. The percentage of national frames suddenly ebbed from 60 to slightly over 10 percent in August 2003, and then gradually increased (with some decrease in between) to reach a peak in December, after which national frames suddenly disappeared altogether. The ebb and flow reflected the shift of the newspaper's focus from and to discussion of the SARS outbreak within a national context.

The change in the number of space frames displayed in Figure III suggested that regional frames were somewhat frequently used in stories published in April and May 2003. During the remaining months, very few stories were contextualized within certain parts of a specific country.

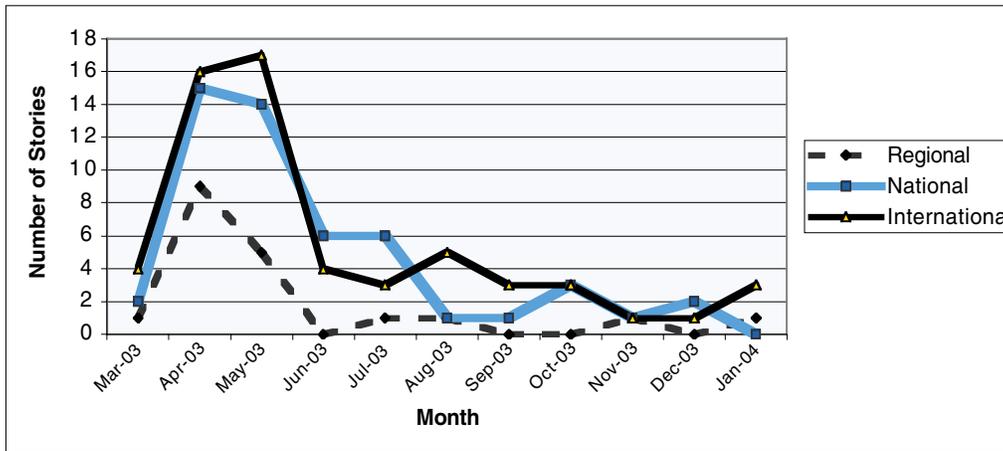


FIGURE III: CHANGE OF SPACE FRAMES IN THE NUMBER OF STORIES (N=130)

Research question three asked how the framing of the SARS stories changed on the time dimension over time. Data analysis showed that only a negligible proportion (1.4%) of the stories employed past frames. Figure IV displays the distribution of present and future frames. Present frames were the most dominant frames during the whole life span of the SARS epidemic. During the first few months of the outbreak, and in September and December 2003, an overwhelming majority of the articles employed present frames. Due to the limited use of past frames over time, the use of future frames and present frames were complementary. When the media attention slightly shifted away from current updates of the SARS situation, predictions and proposition about future preventive procedures gained some prominence.

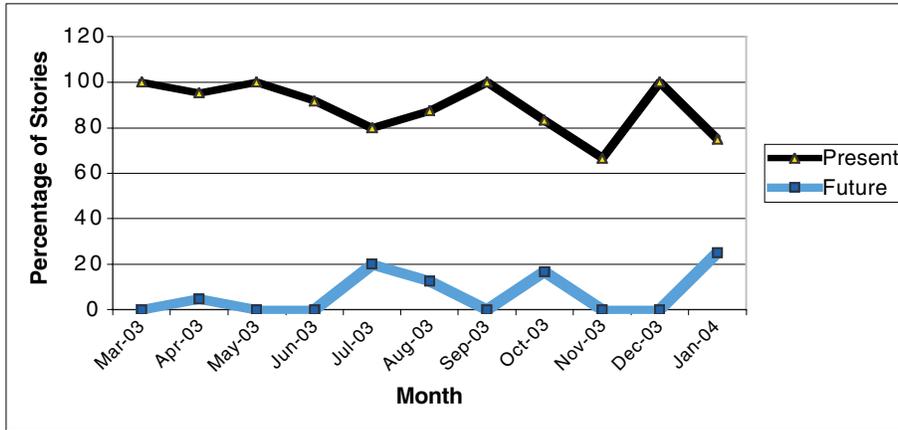


FIGURE IV. FRAME-CHANGING ON THE TIME DIMENSION (N=138)

Because SARS coverage in the *New York Times* tailed off after May 2003, a distribution of the number of stories adopting various time frames may be more revealing. As illustrated in Figure V, the number of stories employing present frames reached a peak in April and May 2003, and gradually decreased during the remaining months. The number of stories using future frames remained low during the whole process, with slight fluctuations in April and July 2003.

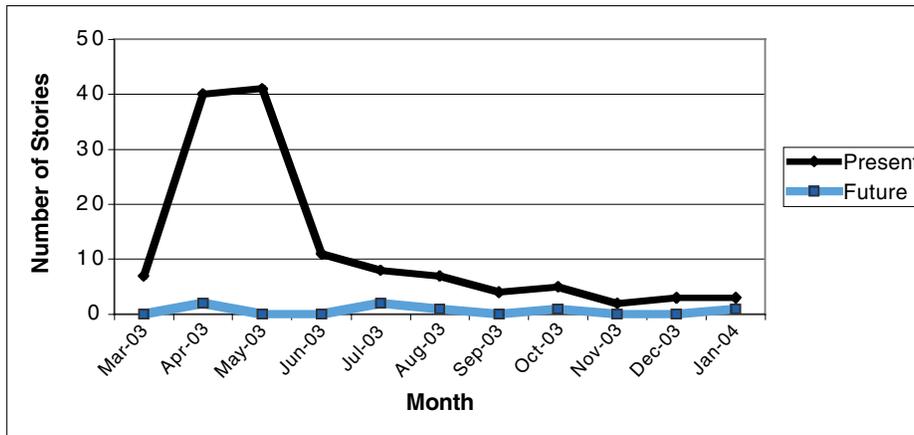


FIGURE V. CHANGE OF TIME FRAMES IN THE NUMBER OF STORIES (N=138)

Research question four concerned the relationship between frame use on the space and time dimensions. Chi-square results in Table I suggested that on all three levels of space frames that were frequently used (regional, national, and international), present frames were always the most prominent on the time dimension. No significant correlation of frame use on the space and time dimension was identified ($X^2 = .375, p. > .05$).

TABLE I. CORRELATION OF SPACE AND TIME FRAMES

		Time Frame		Total
		Present	Future	
Space Frame	Regional	17 (13.3 %)	1 (.8%)	18 (14.1%)
	National	48 (37.5%)	2 (1.6%)	50 (39.1%)
	International	56 (43.8%)	4 (3.1%)	61 (46.9%)

$X^2 = .375, df = 2, p. = .829$

Discussion and Conclusions

This analysis of SARS coverage in the *New York Times* suggests that, as this multi-wave event unfolded, media coverage of the event was a dynamic rather than static process and frame-changing was employed as a strategy to keep the event alive on the news agenda. It provides empirical evidence that Chyi and McCombs's two-dimensional model (2004) is applicable to a multi-wave crisis with international influence.

The SARS Epidemic received intensively coverage in the newspaper, particularly during the first four months (March-June 2003), when most of the SARS cases were reported and knowledge about the disease was highly limited. In terms of the severity of the disease situation and quantity of published news stories, these four months were the peak of the SARS Epidemic. Large doses of information were provided to help the public assess and interpret what was going on. While the SARS cases found in September 2003 and January 2004 joined the thousands of cases identified during the peak and made the epidemic a multi-wave crisis, the cases during the later months of the epidemic were merely sporadic and the situation of the disease was by no means as severe as it was when SARS hit the world in March 2003. Therefore, as the data indicated, the *New York Times* published approximately three quarters of the SARS stories in the first four months. During the following months, regular but non-intensive coverage ensured that the disease remained on the agenda but the ranking was no longer high.

The amount of SARS coverage during the early stage of the epidemic reflected the news media's role in relieving information anxiety among the public during a crisis. Under circumstances of uncertainty, the public may demand tremendous amount of information, sometimes more information than the media can provide (Neal, 1998), for explanation, interpretation, and consolation (Graber, 1980; Schramm, 1965).

The frame-changing pattern on the time dimension revealed in this study was to a certain extent consistent with what Graber (1980) described as three stages of media coverage during a crisis. During an early stage of a crisis, which was the first few months of the SARS Epidemic in this study, the media focused on updating the disease situation, therefore using mostly present frames. As more had been revealed about the disease and the level of uncertainty and anxiety among the public decreased, the media employed more future frames than did in the earlier stage to place the crisis in a broader, long-term context.

There are two possible explanations for the limited use of past frames. One is that SARS was so new to the whole world that insufficient background information was available as the crisis

unfolded, even months after it broke out internationally. However, SARS is not the first disease that originated from animals, unexpectedly infected human bodies, and remained incurable. Another explanation is that the newspaper focused almost exclusively on the changing disease situation that it ignored contextual information. As a consequence, the audience received inadequate background information to help readers better assess the disease situation.

On the space dimension, the epidemic started as an international disease and affected a number of countries during its life span. Therefore, international frames were the dominant space frames in the early stage (which happened to be the peak) of SARS coverage. At the same time, nearly as many articles were published using national frames. An explanation for the heavy use of national frames is that the countries that were the center of the reported cases during the peak of the epidemic were scattered around the world (from Southeast Asia to North America), and the sporadic cases identified during the remaining months were contained within national boundaries. Therefore it is not surprising that in the SARS-infected countries the outbreak can be considered more a national occurrence than a global disease (Zeng, 2006).

The core frame (Chyi and McCombs, 2004), which referred to the frame that initially registered the SARS outbreak on the U.S. media agenda, was the “international plus present” combination. Although not an all-time dominant frame, this core frame was employed in nearly half of the coverage during the whole process, indicating that the newspaper focused primarily on the attributes most relevant to the event.

On the other hand, the heavy use of the extended frame, the “national plus present” combination, was a reflection of the nature of the SARS epidemic as a national occurrence, especially when the stories were written from the perspective of a SARS-hit country (Zeng, 2006). Switching between international and national frames suggested that the newspaper took into consideration of the nature of SARS by changing the importance of the international and national perspectives over time.

Consistent with previous research, findings from this study suggest that framing of a news event is an on-going process (Chyi and McCombs), although clear-cut patterns of frame-changing are sometimes hard to identify. In a multi-wave event that lasted a long time like the SARS epidemic, the patterns of frame-changing can be very complicated. Further research should reveal the factors behind such changes. In addition, more attention is needed to examine from a dynamic perspective other aspects of framing, such as characterization of a news event and how sources are used.

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