
MEDIA SALIENCE AND FRAME CHANGING ACROSS EVENTS: COVERAGE OF NINE SCHOOL SHOOTINGS, 1997-2001

By Glenn W. Muschert and Dawn Carr

This study applies the two-dimensional analytical framework suggested by Chyi and McCombs to assess its utility in studying frame-changing across similar events and between more and less salient events. A content analysis examines New York Times reportage of nine rampage school shootings occurring between 1997 and 2001, identifying the frame-changing dynamic occurring across events and the core frames present in the coverage. Ultimately, the methodological complexities of making cross-case comparisons are explored, including the overlap of measures of frame-changing and salience.



Increasingly, research has begun to examine the process through which the mass media highlight varying aspects of topics to build and maintain issue salience over time. Extending the study of object salience, typically measured through volume of coverage,¹ scholars have recently turned to studying the process through which journalists apply differing frames over the life span of a news event, known as "frame-changing." Chyi and McCombs presented a new analytical scheme for analyzing the frame-changing process along two continua: the spatial and temporal elements of a news event. In a 2004 article, they applied the scheme to the news coverage of the 1999 Columbine school shootings.²

Although the analytical framework was originally applied to a single case, it was also suggested as a "generalizable measurement scheme applicable to the study of framing of any object in the news."³ This study is an empirical application of the coding scheme introduced by Chyi and McCombs, examining mass media framing across similar news events: a total of nine school shootings occurring in the United States between 1997 and 2001. This extension of the Columbine study uncovered the underlying frame-changing process occurring across cases, including shifting in the core frame-orientations used to describe school shootings in the *New York Times*. In addition to its cross-case utility, this study also assessed another aspect of the scheme: its usefulness for comparing highly salient news events with less salient ones.⁴ Ultimately, we argue that the new coding scheme proved useful on both counts, although the results generated some methodological concerns

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raised by attempts to make comparisons between cases of varying salience.

Literature

While this study serves as an extension and application of the framework proposed by Chyi and McCombs,⁵ it also builds upon a body of literature in media studies examining issue salience across events. Roughly speaking, studies of salience fit into three groups: those highlighting the issue-attention cycle, attribute agenda setting, and framing. In recent years, scholars have also begun to make connections between the latter two approaches.

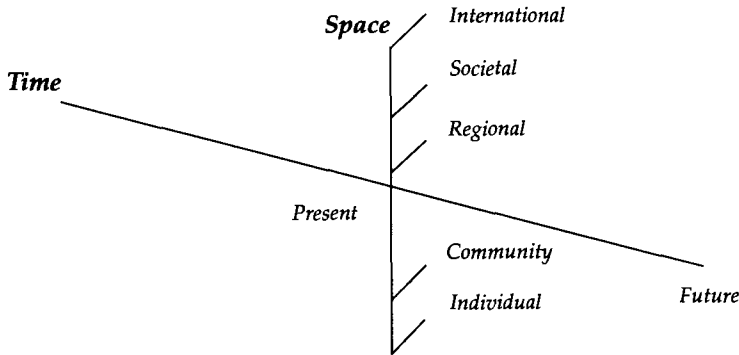
In an early study of media salience, Downs⁶ coined the term "issue-attention cycle," which referred to the process through which topics/problems emerge, gain public interest, and fade away, only to be replaced by other topics capturing the public interest. Downs' study was one of the earliest to examine the temporal element in issue salience within the news, measured by public interest. More commonly, object salience has been measured by the amount of attention that an issue received in the media.⁷

McCombs and Shaw⁸ introduced the term "agenda setting," which involved the process through which journalists select and highlight certain issues. Their study examined the influence journalists have on setting the issues for a given election. Subsequently, studies shifted from the examination of an object, such as an issue in an election campaign,⁹ to the examination of attributes of the object.¹⁰ These second-level agenda-setting studies examined the attributes of news objects, whether events or issues, which are selected for coverage in the media.¹¹ For example, Manheim¹² described three dimensions of the media agenda: visibility, audience salience, and valence, for which visibility and audience salience have been described as externally grounded according to the *attention* given to an object and its *prominence*.¹³ *Attention* has been examined according to the number of news stories about a given issue describing its salience,¹⁴ whereas the *prominence* of a news event captures a story's salience according to placement, size, pictures, and other dimensions.¹⁵ While there has been disagreement about which attributes are important to study and the proper method to utilize in their study, more recently, scholars have begun conceptually to connect the attribute agenda setting and the framing literatures.¹⁶

Framing is defined as "the construction of an agenda with a restricted number of thematically related attributes in order to create a coherent picture of a particular object."¹⁷ By selecting and changing frames of coverage among and within news events, mass media producers influence the nature of reality presented to the public. When the frame-changing process is the focus of research examining the maintenance of salience, the convergence of the agenda-setting and framing literatures is perhaps most appropriate.¹⁸ Here, media sub-frames are utilized as measures of attribute salience, thereby connecting the two literatures.

While scholars may recognize the conceptual convergence of the two approaches, there are relatively few studies that demonstrate this

FIGURE 1
Chyi and McCombs' Two-Dimensional Measurement Scheme Table



Source: Hsiang Iris Chyi and Maxwell McCombs, "Media Salience and the Process of Framing: Coverage of the Columbine School Shootings," *Journalism & Mass Communication Quarterly* 81 (spring 2004): 25.

across incidents. A few notable exceptions are Iyengar's study of episodic frames in public issues¹⁹ and Winter and Eyal's study of civil rights issues,²⁰ which systematically analyzed time framing as a way of revealing the media agenda presented in the *New York Times*. Chyi and McCombs²¹ suggested an analytical framework for the study of frame-changing across incidents; however, this framework has not to date been applied across cases. Instead, their study examined the attributes highlighted in the Columbine news event that contributed to its salience, with focus on the frame-changing process of salience-maintenance. In its initial application, the proposed framework was successfully used to demonstrate frame-changing for the single news event; however the cross-incident potential of the analytical scheme remains untapped. The current paper attempts to test the efficacy of the Chyi and McCombs scheme across multiple news events, and to assess the utility of the scheme in making comparisons between more and less salient news objects.

To create an analytical framework for studying the framing process across episodes, Chyi and McCombs suggested a new measurement scheme,²² illustrated in Figure 1. The logic of the scheme connected two basic facets of news content, the "where" and the "when" of the axiomatic five W's of journalistic practice, allowing for conceptualization of discourse as occurring along *space* and *time* continua.

The space dimension referred to the spatial focus of the discourse, which ranged potentially from a micro focus on an *individual* to the macro scale of focusing on the *international*. For its application to school shooting incidents, the individual focus referred to a discussion of the individual participants such as perpetrators and victims. The international focus applied to discussions of the impact of the incident on

Measurement Scheme

TABLE 1
Summary of Selected School Shootings

Location	Date	Perpetrator(s) (Age)	Killed/Wounded	Times Articles
Pearl, MS	10/01/97	Luke Woodham (16)	3/7	4
West Paducah, KY	12/01/97	Michael Carneal (14)	3/5	13
Jonesboro, AR	3/24/98	Mitchell Johnson (13) Andrew Golden (11)	5/10	31
Edinboro, PA*	4/24/98	Andrew Wurst (14)	1/3	3
Springfield, OR	5/21/98	Kipland Kinkel (15)	4/25	27
Littleton, CO ** (Columbine)	4/20/99	Eric Harris (18) Dylan Klebold (17)	13/28	170
Conyers, GA	5/20/99	T.J. Solomon (15)	0/6	16
Santee, CA	3/05/01	C. Andrew Williams (15)	2/13	20
El Cajon, CA ***	3/22/01	Jason Hoffman (18)	0/5	6

Sources:

Mark K. Leary, Robin M. Kowalski, Laura Smith, and Stephen Phillips, "Teasing, Rejection, and Violence: Case Studies of the School Shootings," *Aggressive Behavior* 29 (2003): 202-14.

* Glenn W. Muschert, "Andy Wurst," in *Encyclopedia of Juvenile Violence*, ed. Laura Findlay (Westport, CT: Greenwood Press 2007): 307-09.

** Hsiang Iris Chyi and Maxwell McCombs, "Media Salience and the Process of Framing: Coverage of the Columbine School Shootings," *Journalism & Mass Communication Quarterly* 81 (spring 2004): 22-35."

*** "Police Say Student Gunman Was Seeking School Official," *New York Times*, March 23, 2001, sec. A, p. 8, col. 5.

countries outside the U.S. In addition to the micro and macro extremes on the space dimension, there were three intermediary categories, including, from smallest to largest, *community*, *regional*, and *societal*. These three categories applied to discussions involving their respective spatial foci.

Similarly, the time dimension referred to the temporal focus of the discourse, whether an article discussed the past, present, or future relevance of a shooting event. Categories included the *past* orientation, including discussions of past events and history; discussion of *present* events, such as the incidents themselves or their immediate impacts; and predictions about *future* developments, including future steps that might be undertaken to mitigate the risk of additional incidents. Taken together, the spatial and temporal dimensions allow for the examination of changing frames of coverage over time.

As an empirical application of the cross-case efficacy of the coding framework, this content analysis examined the news media coverage of nine noteworthy school shooting incidents occurring in the United States between 1997 and 2001. Table 1 outlines the locations, dates, perpetrators, numbers killed and/or wounded, and number of articles appearing in the *New York Times* for each incident. Cases were selected for three reasons: they qualified as "rampage" school shootings, they caused the most bloodshed, and they received national news media coverage.

The highest profile school shooting events tend to be those characterized as rampage shootings, a subset of all school-related incidents. The Center for Disease Control maintains a national database of school-associated violent deaths which lists 220 events involving 253 perpetrators from July 1, 1994, through June 30, 1999.²³ In *Rampage*, Newman defined rampage school shootings as a subset of these 253 cases characterized as expressive attacks on school institutions: "An institutional attack takes place on a public stage before an audience, is committed by a member or former member of the institution, and involves multiple victims, some chosen for their symbolic significance or at random. This final condition signifies that it is the organization, not the individuals, who are important."²⁴ Newman identified twenty-seven perpetrators in twenty-five rampage school shootings between 1974 and 2001.²⁵

Cases were further limited to those rampage shootings which caused the highest number of casualties, both in terms of fatalities and non-fatal injuries. In fatalities, the cases ranged from zero (Conyers and El Cajon) to thirteen (Littleton), not including the perpetrators. Non-fatal injuries ranged from three (Edinboro) to twenty-eight (Littleton).

In addition, the cases were further limited to those occurring during the apparent string of shootings occurring across the United States, from 1997 to 2001, and to those which received the most significant mass media coverage identified in a previous study.²⁶ In all, nine cases met the study criteria: rampage school shootings causing significant death and/or injury which received coverage in the national news media.

Research Questions. This study was guided by the following research questions:

How many news stories appeared about the selected events, and how were these distributed across the life span of each news event?

What was the distribution of space frames, and was any frame-changing evident over time?

What was the distribution of time frames, and was any frame-changing evident over time?

Did the framing of the space and time frames change across events?

What was the relationship between the use of the space and time frames?

Did the use of space/time frame combinations change across events?

Method

To examine the evolution of frame changing in similar events, the analysis applied the Chyi and McCombs coding scheme to the *New York Times* articles for the selected cases. The *Times* was selected because it is recognized as an agenda-setting print source²⁷ and because it was the source of data utilized in the original study.²⁸ Data were collected on eight of the nine school shootings, and the findings from the Littleton study were extrapolated from the Chyi and McCombs study.²⁹ Articles were identified using keyword searches in the Lexis-Nexis database using the place names associated with the eight selected shootings. Excluding letters to the editor, 120 articles were collected, with the number of articles varying from three covering the Edinboro shootings to thirty-one for the Jonesboro case. Including the 170 *Times* articles discussing the Columbine case, this research draws on 290 articles covering the nine selected school shooting incidents occurring between 1997 and 2001.

The study of the framing of these incidents necessarily assumed the cumulative effect of previous shootings on the media discourse surrounding subsequent incidents. While it would be most advantageous to study cases as entirely discrete, the actual sequencing of the shootings themselves complicated the analytical separation between incidents. Notably, the March 24, 1998, Jonesboro shootings preceded the April 24, 1998, Edinboro shootings by thirty-one days, which in turn preceded the May 21, 1998, Springfield shootings by twenty-seven days. Similarly, the April 20, 1999, Columbine shootings in Littleton occurred thirty days prior to the May 20, 1999, Conyers shootings. In addition, both of the California incidents occurred in the San Diego metropolitan area, as the March 5, 2001, Santee shootings occurred only seventeen days prior to the March 22, 2001, shootings in El Cajon.

According to Downs,³⁰ public opinion rarely remains focused on any one issue for very long regardless of the importance of the issue to society as a whole. However, there is variation in exactly how long certain issues remain a topic of focus, with competition and attention distraction altering the life span.³¹ Although the life span of a typical issue has been empirically described as 18.5 months,³² previous research demonstrated that the duration of the Columbine event was one month.³³ Assuming that the thirty-day life span can be generalized to apply to other school shooting media events, the overlap of the Edinboro shooting with the Springfield shooting and the overlap of the Santee shooting with the El Cajon shooting might have acted to confound the study of the framing of each individual shooting. To hedge against analytical conflation caused by temporal overlap of the cases, researchers classified each article as pertaining predominantly to the coverage of a single shooting. This was accomplished by examination of articles returned in multiple

searches in order to determine which shooting incident was its primary focus.

As in the original study,³⁴ each article was coded by date of publication, spatial focus,³⁵ and time frame. Categories for the "space" frame included (1) *Individual*: when the article focused on the individual participants, such as the shooters and victims; (2) *Community*: when the article focused on the community in which the shootings occurred;³⁶ (3) *Regional*: when the article focused on the metropolitan area or state in which the shooting occurred;³⁷ (4) *Societal*: when the article focused on the national impact, concern, or discussion of the shooting; and (5) *International*: when the article focused on the international impact, concern, or discussion of the incident.

Categories for the "time" frame included (1) *Past*: when the article discussed events from the past that had no direct linkage to the school shooting event (for example, discussion of past shooting events, the history of violence in America, or the shooters' life histories prior to the event); (2) *Present*: when the article focused on the key event, the immediate consequences, or current social trends; and (3) *Future*: when the article focused on enduring effects of the shootings and possible solutions or prevention strategies.

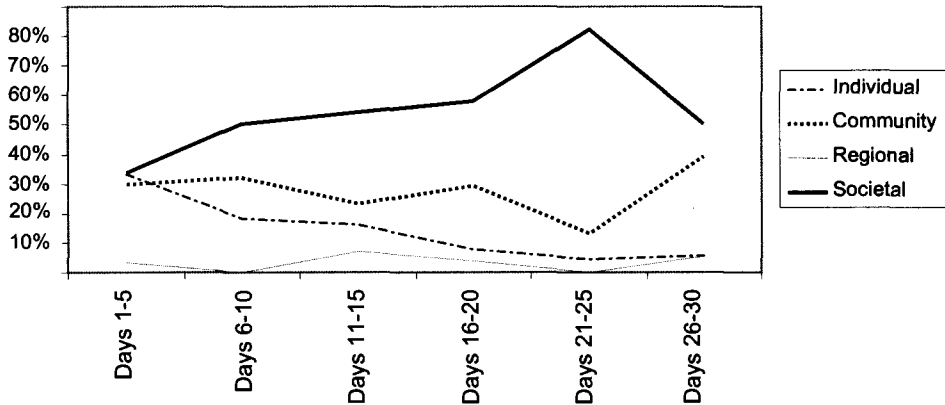
Two coders, social scientists and co-authors of the article, performed the content analysis. When a story contained multiple frames for a single dimension, the coders identified the dominant frame, by examining the headlines, article leads, and central thrust of the article. To ensure inter-coder reliability, pretests were conducted using Scott's π .³⁸ For the space dimension, an initial pretest returned an observed 80% agreement between coders, with a π -value of .71. Subsequent refinement returned an observed inter-coder agreement of 93%, with a π -value of .90. Along the time dimension, coding returned an observed agreement of 93%, and a π -value of .80. In all, the pretests ensured high inter-coder agreement, leading to reliability of coding.

Volume and Pattern of Coverage. The Littleton shootings attracted the most media coverage, appearing in 170 *Times* articles, while the other eight shootings studied appeared in a total of 120 articles (see Table 1). Although some shootings were covered more extensively than others, the timing of articles for all nine shootings followed a similar pattern. For each of the shooting incidents, coverage spiked within the first two to four days following the incident, and then gradually diminished during the following month.

Space Frames. Analysis revealed variability in the distribution of frames along the space dimension. Of the 290 articles, 48% adopted a societal frame, 29% adopted a community frame, and 21% adopted an individual frame, indicating variability among these categories of the spatial vector. Only 2% adopted a regional frame, and aside from the 1% of articles from the Columbine data, none of the articles discussing the other eight shootings adopted the international frame. In the coverage of each of the shootings, the societal frame dominated the discussion in the news.

Findings

FIGURE 2
Distribution of Space Frames, by Five-Day Period

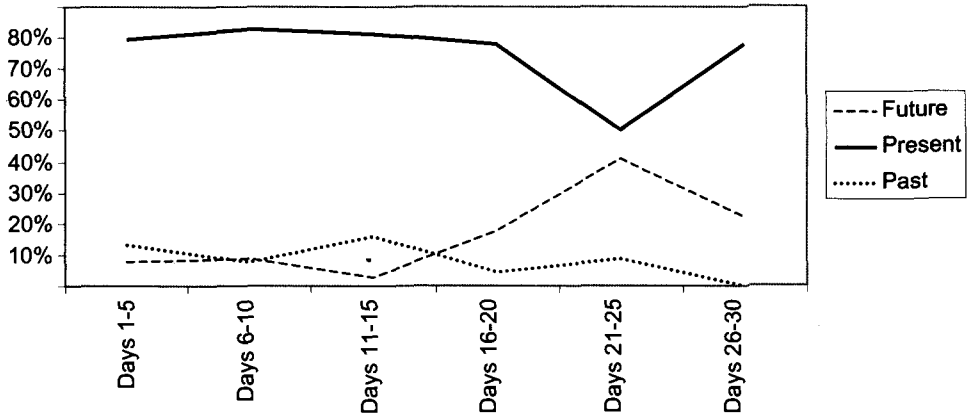


Further analysis revealed that the spatial framing evolved over the life span of the news events. Figure 2 illustrates the aggregate proportion of three dominant space frames present in each five-day period following the shooting incidents. A closer examination of the three dominant frames suggested that the individual, community, and societal frames comprise approximately one-third of the articles appearing immediately after the incidents. The societal frame climbs to comprise more than 80% of all articles appearing in the fifth five-day period, finally falling to approximately 50%. Conversely, the community frame decreased over the life span of the story, while rebounding in the final period. Over time, the individual frame decreased to less than 10% of the total articles appearing during the final five-day period. The pattern of frame-changing suggests that immediately following a school shooting incident the media focus equally on the individuals involved, the community, and the social importance of the event, but over time, the focus increasingly shifts away from individuals to the societal level.

Time Frames. Analysis also revealed variability in the distribution of frames along the temporal continuum. The present temporal orientation was clearly dominant, accounting for over one-half of articles during each five-day time period observed. On the whole, 78% of articles adopted a present frame, 12% adopted a future frame, and 10% adopted a past frame, indicating frame-changing among these categories of the temporal dimension.

The analysis also revealed frame-changing along the time dimension. Figure 3 illustrates the aggregate proportion of time frames present in each five-day period following the incidents. The present orientation typically appeared in approximately 80% of all articles, although the fifth period stands out as the exception. Consequently, both the past and future frames were less prevalent over the life span of the stories, although the future orientation appeared more prominently during the fifth period following the shootings. The pattern of frame-changing sug-

FIGURE 3
Distribution of Time Frames, by Five-Day Period



gests that most of the discussion following school shooting incidents concentrates on current events, although during the period roughly three weeks following the shootings, the news media may publish articles more strongly oriented toward the future.

Frame-Changing Across Events. While the framing of the other school shooting events closely resembled that observed in the Littleton coverage alone, one contribution of this study lies in its tracking of

FIGURE 4
Space Frame-Changing across Events

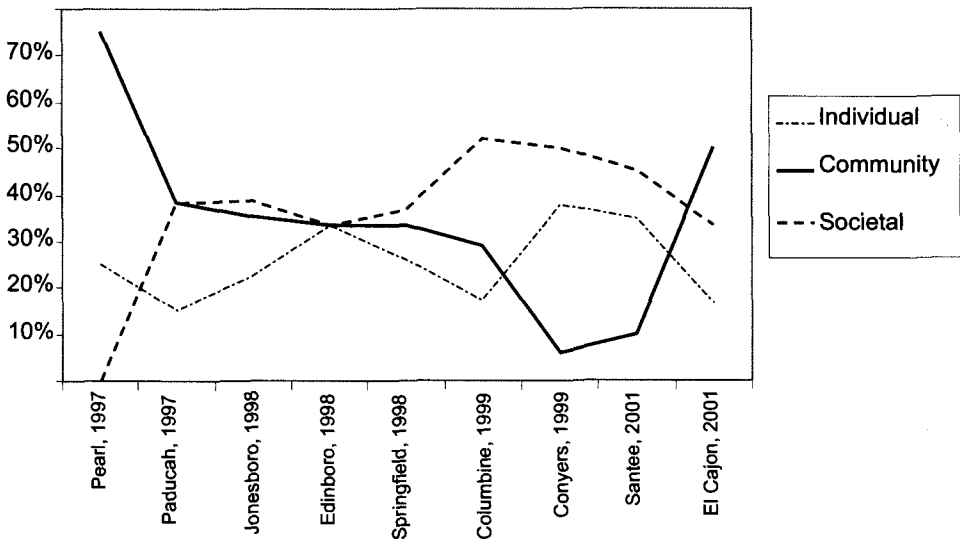
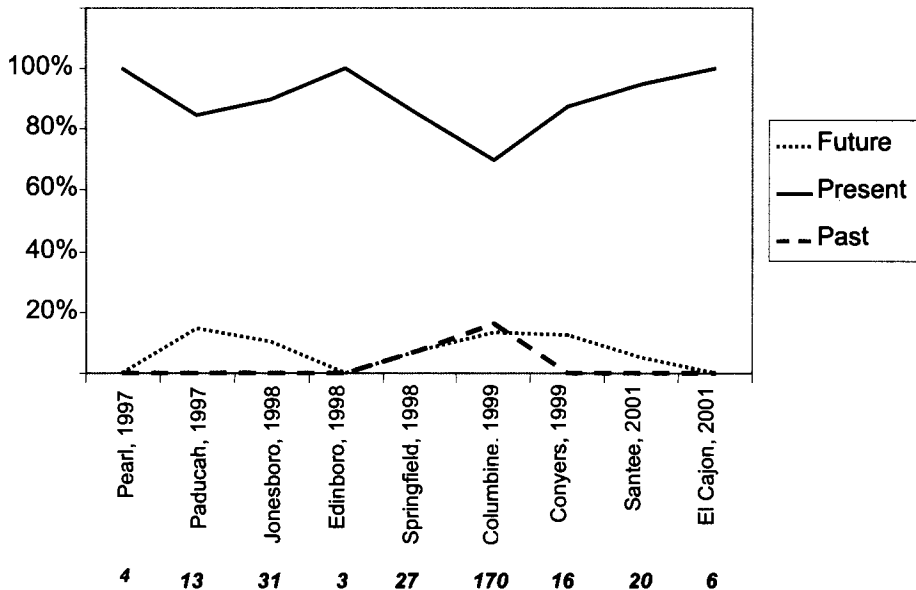


FIGURE 5
Time Frame-Changing across Events



frame-changing across events. Figure 4 illustrates the proportion of articles appearing from each space frame, by shooting incident. While it was noted in the original study³⁹ that the societal frame dominated the Littleton media coverage, examination of the spatial framing of the eight other shootings revealed a different pattern. Initially, community dominated the space frame, appearing in 75% of the articles about the Pearl incident. For the subsequent five shootings, the community frame appeared in roughly one-third of articles, after which it diminished to less than 10% for the Conyers and Santee shootings. The final shooting at El Cajon sparked resurgence in the community frame.

The societal frame varied inversely with the community frame, absent early on, and then gained prominence over time. While none of the articles discussing the Pearl shooting featured its national relevance, for the subsequent shooting the societal frame quickly gained prominence. Following the Paducah shootings, the societal frame was featured in one-third to one-half of all articles, peaking with Columbine and Conyers, at 52% and 50%, respectively. Following the last two shootings in California, the societal frame continued its downward trend, but still appeared in at least one-third of articles.

The frame-changing observed in the space frame suggested that the earliest school shooting was salient exclusively because of its impact on the individuals involved and the community in which it occurred. While the community and societal frames varied greatly across events, the impact of the shootings on individuals remained a less-domi-

TABLE 2
Space Frame by Time Frame, Comparing Littleton / All Other Events*

		<u>Time Frame</u>		
		Past	Present	Future
Space Frame	Societal	2% / 1%	39% / 31%	13% / 8%
	Community	4% / 0%	24% / 29%	1% / 0%
	Individual	10% / 1%	7% / 26%	0% / 0%

Source: *Hsiang Iris Chyi and Maxwell McCombs, "Media Salience and the Process of Framing: Coverage of the Columbine School Shootings," *Journalism & Mass Communication Quarterly* 81 (spring 2004): 31.

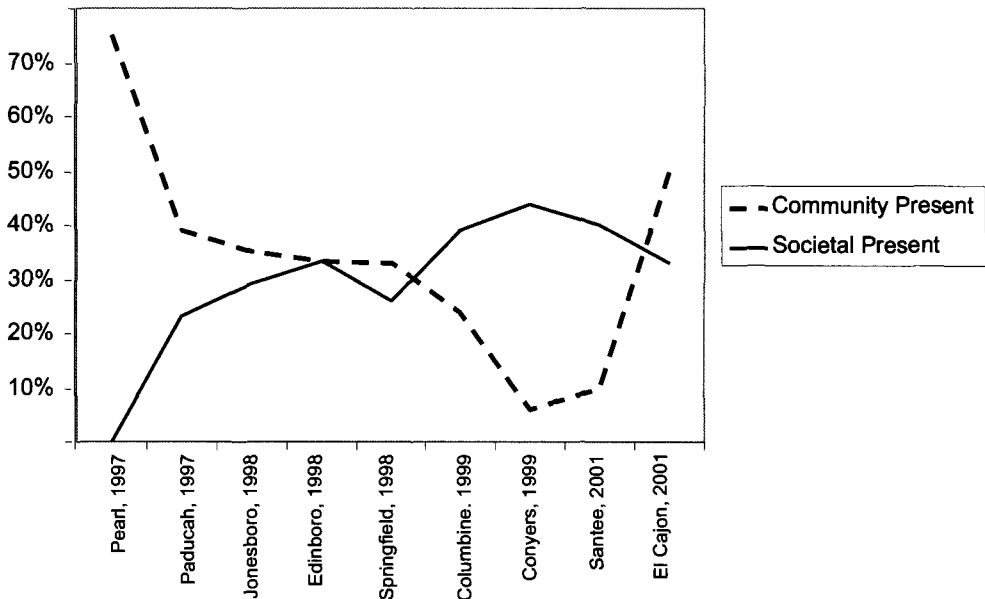
nant, but consistent feature of the reportage of all cases. Over time, the *Times* highlighted the societal significance of the cases, while the communities in which the shootings occurred were the subject of relatively less attention.

When compared to the variation observed in the space frame, analysis of the time dimension revealed less marked frame-changing, as illustrated in Figure 5. For all school shooting cases studied, the present time frame appeared most frequently, appearing in 70% of articles for Littleton, and otherwise in at least 85% of articles for all other cases. Consequently, the past and future frames appeared in a relatively small proportion of articles across all cases. Framing along the time continuum varied directly with the number of articles appearing for each case. Therefore, a summary description of the time framing of the selected school shooting cases is that most articles followed a current-events orientation, with more heavily-discussed cases also including some examination of the historical and future significance of the event.

Core Frame-Changing of School Shooting Events: Cross-tabulation of findings along the space and time dimensions explored the relationship between the analytical foci, revealing the existence of core frames and a core frame-changing dynamic in the mass media coverage of school shootings. In the original study of the Littleton coverage, Chyi and McCombs⁴⁰ discovered that the societal-present combination appeared in 39% of articles, and that the community-present combination occurred in 24% of articles. Thus, the societal/community-present orientation constituted the core frame for the Columbine coverage. In addition, the results also illustrated the tendency for smaller scale space frames to be associated with past or present orientations in time, while larger scale space frames were more often associated with present and future temporal orientations.

In this extended study, the same relationships were observed: namely, the societal-present⁴¹ and community-present⁴² orientations

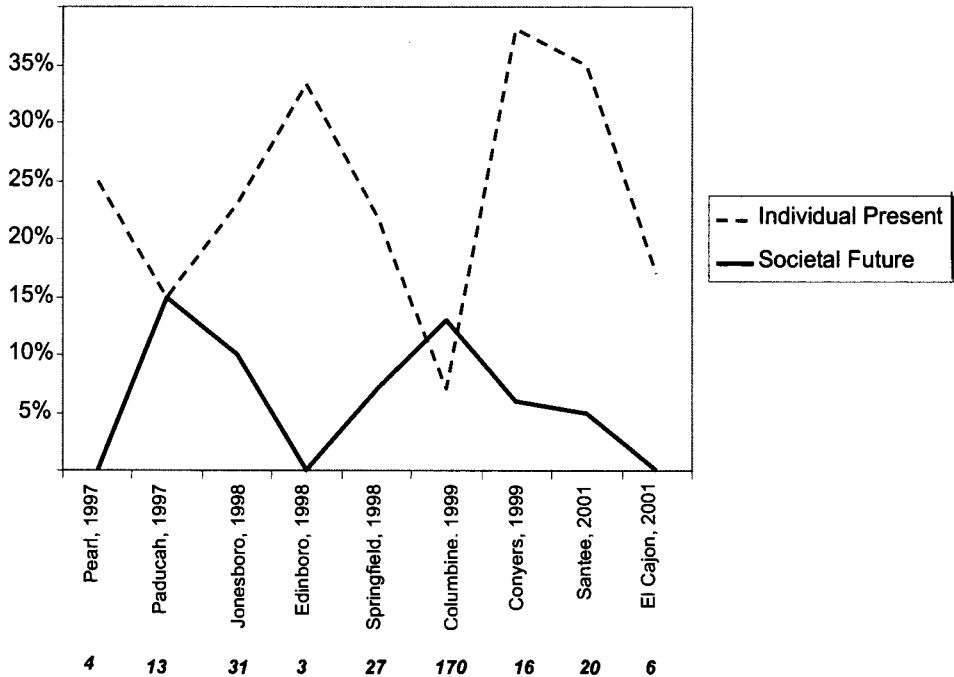
FIGURE 6
Dominant Core Frame-Changing across Events



were the most salient core frames present in the aggregated cross-tab, as illustrated in Table 2. Similarly, the narrower space orientations were more frequently discussed in the past and present orientations, while the wider space frames appeared in the present to future time frames. Therefore, when examined as a whole, the core framing of the selected school shooting cases remained consistent with those identified in the initial study.

When plotting the core frames across events, frame-changing became evident, as illustrated in Figure 6. In the *Times* discussion of the earlier incidents, the community-present frame appeared most frequently. During the later shootings, the community-present frame decreased in prevalence, but for the coverage of the final shooting incident, the frame again appeared in the highest proportion of articles. Over time, the societal-present frame increased in prevalence, dominating the discourse concerning the later incidents. Such a pattern suggests core frame-changing across school shooting incidents. Specifically, when school shooting events were discussed, earlier discussions tended to focus on the present effect of the incidents on the communities in which they occurred, while over time this discussion gave way to the impact and meaning of the shootings on a societal level. Toward the end of the study period, although we observed resurgence in focus on the community impacts of the shootings, the social impact of the events remained a salient element.

FIGURE 7
Secondary Core Frame-Changing across Events



In addition to the two dominant core frames, analysis also revealed frame-changing in the tertiary and quaternary core frames, as illustrated in Figure 7. Overall, the third most common frame combination, appearing in 15% of articles, was individual-present,⁴³ or discussion of the immediate impact of the shootings on those involved. Appearing in 10.7% of articles, the fourth most common core frame was societal-future,⁴⁴ which generally consisted of discussion about future trends in youth violence and policies designed to mitigate the problem. Although the two most common core frame combinations were not associated with the frequency with which articles appeared, the third and fourth core frames appear to be functions of the volume of coverage.

The individual-present core frame varied indirectly with the volume of articles appearing for each event. This suggests that the individual-present concern remained, in absolute numbers, relatively constant across events. Indeed, with the exception of the Littleton coverage which included twelve articles utilizing the individual-present core frame, the other eight cases contained between one and seven articles highlighting this core frame. Therefore, the individual-present oriented articles appeared in larger proportion in the less-publicized shoot-

ings, despite the fact that they remained relatively consistent across events. Earlier findings indicated that the individual framed articles typically appeared shortly after the incidents, and therefore we conclude that the tertiary individual-present core frame was a consistent frame employed in the immediate aftermath of these shocking events.

Conversely, the quaternary societal-future core frame appeared to vary in direct proportion to the volume of coverage for each event. Although this core frame was a relatively minor component of the overall discourse about school shooting events, its variability was related to the general salience of each event. Namely, those shootings attracting more attention in the *Times* were also discussed in terms of their societal relevance. This can be explained as salience-maintenance on the part of journalists, and by the fact that a larger corpus of coverage allowed higher latitude for variability in topical content.

Discussion

This analysis has added to our knowledge about news media coverage of school shootings, and simultaneously served as an example of the usefulness of the Chyi and McCombs coding scheme⁴⁵ in analysis across incidents. On a concrete level, we have tracked the emergence and evolution of the school shooting problem during a period of five years. In the 290 articles discussing the nine selected school shooting incidents between 1997 and 2001, the *New York Times* utilized varying combinations of space and time frames to maintain the salience of the issue in the media. Specifically, findings suggested that the school shooting problem initially appeared in the news media as an issue of concern primarily to the present-tense concerns of the communities in which they occurred, but over time, the shootings were increasingly discussed in terms of their societal impact, both present and future. Toward the end of the study period, we observed that the societal frame again decreased, while community-level discussions appeared to increase.

Used as a method to track issue-agendas in the media discourse, the analytical scheme offers the potential to verify findings in studies examining the media life span of issues in the news.⁴⁶ In the present study, we tracked the school shooting issue across its lifespan (see Figure 4). While the February 1997 Bethel, Alaska, school shooting otherwise fit the criteria for inclusion in the study, the incident was not covered in the *Times*. In addition, the Pearl case did not include any articles framing the discussion on the societal level. In December 1997, the West Paducah incident was the first to receive coverage framed on a societal level, and articles using this frame peaked approximately fourteen months later with the Littleton coverage in April 1999. One month later, with the Conyers case in May 1999, the societal frame began its decline in prevalence, continuing in March 2001, approximately thirty-nine months after its emergence as an issue. Although this picture of school shootings as an issue on the public agenda has been based on a limited number of cases, it demonstrated the utility of the coding scheme to track its emergence, peak, and decline. Hence, the application of the analytical scheme facilitated syn-

thesis of incident-driven mass media events (coverage of specific shootings) and the larger public issue expressed periodically in the news coverage (the school shooting problem in general).

As a general application, the empirical study of the space and time frames has confirmed that the coding scheme proved useful as a framework for understanding how space and time frames evolve across similar events over time. While this cross-case potential had been previously noted,⁴⁷ until now it had not been the subject of empirical application. If the present findings may be generalized to other series of events, the cross-case applicability of the coding scheme may facilitate the identification of the core temporal-spatial frames, and the nuanced core frame-changing occurring over time. This type of analysis may be of interest to scholars of media agenda setting, including scholars of social problems discourse, as it offers a framework for understanding the appearance and subsequent decline of a phenomenon on the societal agenda.⁴⁸

The other purpose of this study has been to evaluate the coding scheme in terms of its efficacy as a means of making comparisons between more and less salient news events. Our analysis has compared the coverage of a highly salient event (e.g., Littleton, with 170 articles) with that of notably less salient events (e.g., Edinboro and Pearl, with three and four articles, respectively). Such differential in salience necessitated the use of proportions to make comparisons; however, proportions proved more elastic for less-salient cases, where a small change could produce a notably different proportionate result. The elasticity of less salient events, particularly those covered in relatively few articles, highlighted the need for inter-coder reliability testing.

In addition, measures of frame-changing overlapped with typical measures of salience, frequently measured by volume of coverage.⁴⁹ When both are indicated by frequency of articles appearing in a data set, measures of frame-changing may overlap with measures of media salience. The third and fourth core frames analytically illustrated the indirect and direct links between measures of framing and salience, respectively. While we did observe that highly salient events allowed the utilization of wider frames of coverage, our analysis also suggested that in some cases frame-changing may be indirectly related to the number of articles per case. Due to the analytical elasticity of framing measures observed in smaller cases, frame-changing was more pronounced in less salient cases than in highly salient ones. Conversely, in highly salient cases, frame-changing was less pronounced, as single articles exerted less leverage on the proportion of articles appearing for any given frame. For example, more heavily-covered cases contained more equity in frames employed, but the proportions were notably less elastic than in the smaller cases.

Beyond adding to knowledge about the media coverage of school shooting incidents in the United States, and the empirical application of the Chyi and McCombs scheme for tracking space and time frames across events, this study has raised issues of tracking media discourse in the public agenda-setting arena. We have demonstrated the

mass media's selection of frames and core frames, across five years of coverage of a recurrent issue, tracking the emergence and decline of the social problem of school shootings in the public agenda. The continued mapping of similar agendas, and their effect on publics, remains an important topic for future research in social scientific studies of mass media discourse.

NOTES

1. James P. Winter and Chaim H. Eyal, "Agenda-Setting for the Civil Rights Issue," *Public Opinion Quarterly* 45 (autumn 1981): 376-83.
2. Hsiang Iris Chyi and Maxwell McCombs, "Media Salience and the Process of Framing: Coverage of the Columbine School Shootings," *Journalism & Mass Communication Quarterly* 81 (spring 2004): 22-35.
3. Chyi and McCombs, "Media Salience and the Process of Framing," 23.
4. Chyi and McCombs, "Media Salience and the Process of Framing," 26.
5. Chyi and McCombs, "Media Salience and the Process of Framing."
6. Anthony Downs, "Up and Down with Ecology: The 'Issue-Attention Cycle,'" *The Public Interest* 28 (spring 1972): 38-50.
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Social World, ed. Stephen D. Reese, Oscar H. Gandy, Jr., and August E. Grant (Mahwah, NJ: Lawrence Erlbaum, 2001), 67-81.

17. Maxwell E. McCombs and Salma I. Ghanem, "The Convergence of Agenda Setting and Framing," 70.

18. Chyi and McCombs, "Media Salience and the Process of Framing," 24.

19. Shanto Iyengar, *Is Anyone Responsible? How Television Frames Political Issues* (Chicago, IL: University of Chicago Press, 1991).

20. Winter and Eyal, "Agenda-Setting for the Civil Rights Issue."

21. Chyi and McCombs, "Media Salience and the Process of Framing," 25.

22. Chyi and McCombs, "Media Salience and the Process of Framing," 24-6.

23. Discussed in Katherine Newman, *Rampage: The Social Roots of School Shootings* (New York: Basic Books, 2004), 231-5.

24. Newman, *Rampage*, 231.

25. See Table A.1 in Newman, *Rampage*, 308-9.

26. Brendan Maguire, Georgie Ann Weatherby, and Richard A. Mathers, "Network News Coverage of School Shootings," *Social Science Journal* 39 (2002): 465-70.

27. Todd Gitlin, *The Whole World Is Watching* (Berkeley, CA: University of California Press, 1980).

28. Chyi and McCombs, "Media Salience and the Process of Framing," 26-7.

29. Chyi and McCombs, "Media Salience and the Process of Framing,"

30. Downs, "Up and Down with Ecology."

31. Jian-Hua Zhu, "Issue Competition and Attention Distraction: A Zero-Sum Theory of Agenda-Setting," *Journalism Quarterly* 54 (winter 1992): 825-36; Jian-Hua Zhu and James H. Watt, "Public Issue Priority Formation: Media Agenda-Setting and Social Interaction," *Journal of Communication* 43 (winter 1993): 8-29.

32. Maxwell E. McCombs and Jian-Hua Zhu, "Capacity, Diversity, and Volatility of the Public Agenda: Trends from 1954 to 1994," *Public Opinion Quarterly* 59 (winter 1995): 495-525.

33. Chyi and McCombs, "Media Salience and the Process of Framing," 23.

34. For details, see the coding scheme as outlined in Chyi and McCombs, "Media Salience and the Process of Framing."

35. The *New York Times* is a potential source of bias along the space dimension. As a national news source, the *Times* may focus on larger-scale space frames, biasing empirical study of frame-changing. Comparative study of national, regional, and local news coverage of similar events might uncover evidence of spatial bias.

36. For the community category of the space frame, the coding employed in the present study differs from the original study. Chyi and McCombs conceptualized community as "If the story focuses on Columbine High School, or the town of Littleton, or any other single community" (27 [italics added]). In the present study, the community frame

applied only when the article discussed the specific community in which the shootings occurred. Articles discussing the relevance of the shooting for other communities were coded as "societal" for the space frame. The rationale for this difference came from the supposition that the communities were being discussed as part of the discourse surrounding the relevance of the particular shooting for communities across the nation.

37. As in the community frame, the coding employed for the regional frame in the present study differs slightly from the original study. While Chyi and McCombs (27) included discussion of any other region within the "regional" category of the space frame, the regional frame in the present study includes only those articles focusing on the region in which the shooting occurs. Articles discussing the relevance of the shooting incident for other regions are coded as "societal" for the space frame.

38. Scott's π measures inter-coder reliability, accounting for the agreement likely to occur by chance. See William A. Scott, "Reliability of Content Analysis: The Case of Nominal Scale Coding," *Public Opinion Quarterly* 19 (fall 1955): 321-5.

39. Chyi and McCombs, "Media Salience and the Process of Framing," 29.

40. Chyi and McCombs, "Media Salience and the Process of Framing," 29-31. See especially Table 1, located on page 31.

41. Regarding this "societal and present" association, here are two example quotes:

Amid talk of installing metal detectors at the school doors and in the first day of a new policy of searching students' backpacks for guns, a still-puzzled county sheriff wondered out loud whether the 14-year-old boy who killed three of his classmates in an early-morning prayer circle acted alone, or expected help. ("Theories but No Answer in School Shooting," *New York Times*, December 4, 1997)

Almost from the moment the bullets stopped flying outside Westside Middle School in Jonesboro, Ark., the explanations and analysis began whizzing by. It was guns. It was the violent culture of the South. It was the violent culture of American media. It was bad parenting. It was the breakdown of the family caused by liberal politics or economic stress. It was violence against women. It was lax juvenile justice laws. ("The Nation: Spin Cycle; Round and Round in the Search for Meaning," *New York Times*, March 29, 1998)

42. Regarding this "community and present" association, here are two example quotes:

Springfield tried to act like a small town on a holiday today, with residents attempting to get on with their lives two days after this city became the latest embodiment of the nation's struggle with violence at schools. ("Shootings in a Schoolhouse: The Town; Springfield Struggles to Heal Itself in Wake of Shootings," *New York*

Times, 24 May 1998)

A man in blue jeans stood in the foyer of the packed Farmers Union funeral home, his arms wrapped tightly around a little girl, as family, neighbors and classmates said goodbye to 12-year-old Paige Ann Herring in the first of two funerals this day. ("Arkansas City Begins Burying Its Young Dead," *New York Times*, March 28, 1998)

43. Regarding this "individual and present" association, here are two example quotes:

Six teen-agers were charged today with conspiracy to commit murder in a case linked to a rampage last week in which a 16-year-old is reported to have stabbed his mother to death and fatally shot two schoolmates. ("National News Briefs; 6 Teen-Agers Charged With Conspiracy to Kill," *New York Times*, October 8, 1997)

The suspect, a 14-year-old student at Parker Middle School here, in rural northwestern Pennsylvania, was charged as an adult this morning with criminal homicide, three counts each of aggravated assault and reckless endangerment and gun and drug charges. ("Student Guns Down Science Teacher Chaperoning School Dance," *New York Times*, April 26, 1998)

44. Regarding this "societal and future" association, here are two example quotes:

In the days following shootings at schools in California and Pennsylvania last week, the new reality of gun control politics became starkly clear. Unlike in 1999, when Democrats reacted almost immediately to the massacre at Columbine High School in Colorado with demands for tough new gun restrictions, there were few calls to action. Senator Charles E. Schumer of New York, one of Washington's most aggressive gun control proponents, simply suggested a voluntary "code of ethics" for gun owners and their families. ("The Nation: Over a Barrel; New Gun Control Politics: A Whimper, Not a Bang," *New York Times*, March 11, 2001)

By a vote of 73 to 25, the Senate tonight passed a juvenile-crime bill that contained an array of new gun-control measures, the fruit of the most significant debate over gun control in Congress in half a decade. ("Guns and Schools: The Legislation; Senate Votes Gun Curbs, Hours After School Shooting," *New York Times*, 21 May 1999)

45. Chyi and McCombs, "Media Salience and the Process of Framing," 24-6.

46. E.g., McCombs and Zhu, "Capacity, Diversity, and Volatility of the Public Agenda."

47. Chyi and McCombs, "Media Salience and the Process of Framing," 26.

48. There is a potential for further convergence between social problems agenda tracking in communications research and sociological research examining social problems in the news. See, e.g., Stephen Hilgartner and Charles L. Bosk, "The Rise and Fall of Social Problems: A Public Arenas Model," *American Journal of Sociology* 94 (July 1988): 53-78; J. William Spencer and Elizabeth Triche, "Media Constructions of Risk and Safety—Differential Framings of Hazard Events," *Sociological Inquiry* 64 (spring 1994) 199-213; William Gamson and Andre Modigliani, "Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach," *American Journal of Sociology* 95 (July 1989): 1-37.

49. Winter and Eyal, "Agenda-Setting for the Civil Rights Issue."