To the Graduate Council:

I am submitting herewith a thesis written by Roger B. Hagy entitled “A Page of History: Front Page Design of Newspapers Covering Three National Tragedies.” I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Communication.

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A PAGE OF HISTORY:
FRONT PAGE DESIGN OF NEWSPAPERS COVERING THREE NATIONAL TRAGEDIES

A Thesis
Presented for the
Master of Science Degree
The University of Tennessee, Knoxville

Roger B. Hagy
May 2007

DEDICATION

This thesis is dedicated to my parents, Roger and Wilma Hagy, whose unwavering, loving support has always encouraged me to do my best, to walk the straight and narrow, and to always be that “little engine that could.”

I thank God for you both.

ACKNOWLEDGMENTS

I would like to thank my advisor, Rob Heller, for not only his advice and support throughout this research, but for his unmatched, encouraging enthusiasm for my work and the field of visual communication. Thanks also to Ben Bates and Bill Robinson for serving on my thesis committee and for their invaluable assistance with this study. Thank you all so much.

I also must express gratitude to my undergraduate advisor, Rachel Tighe of The University of Virginia's College at Wise. Rachel, thanks for being a wonderful communication teacher and friend.

Many heartfelt thanks go to Jane Meade-Dean of The University of Virginia's College at Wise. Jane, thank you for supporting and encouraging me throughout my time in graduate school, and thanks especially for your friendship.

Last but certainly not least, I must thank Wilma Hagy for her tremendous assistance in this research. Your insistence to help in calculating and recording results decreased much of the burden of my final semester and showed me that humbly receiving help is much better than pridefully trying to do everything on my own. Your help is appreciated more than you know. (Thanks, Mom.)

ABSTRACT

This study observed the news coverage of three historically significant and especially emotional national tragedies – the September 11th terrorist attacks, the Space Shuttle Columbia explosion, and the aftermath of Hurricane Katrina – specifically regarding front page design, an increasingly important yet underrepresented facet of journalism research. Past research regarding newspaper page design on typical news days and research regarding the atypical, emotional coverage of the three tragedies fueled the researcher's hypotheses that type, photographs, and layout on front pages covering the tragedies would be significantly different than those on typical news days. In an examination of 436 front pages covering the three national tragedies, the study measured headline word count, headline capitalization, photo count, article count, and the area occupied by photographs, headlines, and text relative to either the entire page or the areas above and below the fold. The study found that headlines tended to be more brief than usual, and 9/11 headlines tended to be fully capitalized, suggesting that headlines were powerful on front pages by being "briefly spoken, yet echoing loudly." Headlines and photos were not buried on the front page, as they tended to occupy more space above the fold, and news articles, while fewer in number, tended to occupy more space below the fold, suggesting that the dramatic headlines and photos "introduced" readers to the page and led them to read the articles. Future research should examine the front page design of other historically significant events, as well as the front page design of newspapers covering typical news days. Future research also should investigate front page layout as

a concept of page design (instead of being considered synonymous with design) and layout's linking function among other design elements.

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CHAPTER I

INTRODUCTION

It is a sad yet well-known fact: The "biggest" news stories are usually the most tragic, and the news media tend to follow the familiar journalistic adage that "if it bleeds, it leads." However, when news events escalate to the scope of becoming national tragedies – events so catastrophic that they strike to the collective heart of the nation's citizenry – the news media have an obligation and a responsibility to cover those events, especially when those events undoubtedly will be crucial moments in history.

This study examines the coverage of three historically significant and especially emotional national tragedies, but specifically regarding newspaper page design, an increasingly important yet underrepresented facet of journalism research. As newspaper circulation continues to decline in favor of broadcast and online news (Shaw, 2006), it is necessary to understand what functions the newspaper should perform in today's predominantly digital society, including newspapers' functions during an emotionally charged national tragedy of major historical importance. This study argues that page design – or more specifically, front page design – is a key determinant in how newspapers react to such events in ways different from those found on typical news days.

The Newspaper in Today's Society

" 'People don't actually read newspapers,' Marshall McLuhan once said. 'They get into them every morning like a hot bath' " (Schoenbach & Bergen, 1998, p. 91). While this may have been a generalizable statement in the past, it likely applies to a steadily decreasing minority of news consumers today. For years, researchers have recognized that the newspaper is gradually fading into the background of news media, as the majority of the news audience increasingly looks to the electronic media for their news. Some argue that attempts to preserve the newspaper's role in today's society are futile and the newspaper should simply go the way of the dinosaur, but others disagree.

For example, Bridges and Bridges (1997) argue that "competition from electronic media… requires dailies [i.e., daily newspapers] to re-evaluate their mission, their definitions of news, and their delivery systems" (p. 826). Schoenbach and Bergen (1998) contend that "research may be necessary to keep the newspaper and its business vital in a growing diverse, competitive, even aggressive market with an ever more indifferent audience" (pp. 89-90).

A Commemorative Function

Newspapers can perform a function that would not be necessary for everyday news, but could be useful, unique, and essential during a national tragedy of historical importance. During a tragic yet historic event, someone should chronicle the event for history's sake. While any news medium can easily chronicle the events, the newspaper is

perhaps the easiest to archive (as a news broadcast must be recorded and an online story must be searched for and saved on a computer, one by one), and it serves as a packaged publication to commemorate the event and to honor those involved.

This commemorative function has received little attention in research or other literature, but some authors have alluded to its possibility. Rieder (2006) notes that "the time is long since past when morning newspapers can pretend they are breaking big national and international news stories." In other words, newspapers must do something different from the other media in covering these big stories for the first time in their own pages.

In addition, Shaw (2006) notes that the Rochester Democrat and Chronicle sold 1,300 copies more than on a typical news day when they released a special issue about President George W. Bush's visit to the city. The author explains that the newspaper sold particularly well that day probably "because readers wanted a keepsake of [President Bush's] visit" (p. 27). If readers are willing to purchase a newspaper solely because the issue commemorates a presidential visit (albeit at the local level), then it would not be surprising if readers would also do so because an issue commemorates and records a historic event like a national tragedy.

Newspaper Design

The design of a newspaper – and the design of the front page of a newspaper – plays a large part in communicating the importance of the articles on a page, which should be especially valuable during a national tragedy of historical importance. In

newspapers' early history, however, newspaper page design was not considered an integral aspect of the paper, due to its inclusion of pervasive text, a haphazard layout, and practically no images (Barnhurst & Nerone, 1991, p. 804). Fortunately, as Nerone and Barnhurst (1995) note, by the 1930s, the artistic movement of modernism had immigrated from magazine design to newspaper design, and

> most papers had come to a modern sense of hierarchy, with a banner head and right-hand-column placement for the top story, often accompanied by an illustration or packaged with related stories, as well as a hard-versus-soft distinction between stories placed above and below the fold. (p. 22)

In short, modernism in newspaper design generated a streamlined front page that "enabled readers to navigate their world with more confidence and efficiency" (Nerone & Barnhurst, 1995, p. 40). Lowrey (1999) notes that the modernist layout has continued to offer readers a "road map" for accessing the news and that modernist newspaper design has now become "nearly universal" over the past few decades (p. 14). Pasternack and Utt (1986) note that some of the most recent developments in modern newspaper page design include "repositioning and redesigning the flag, fewer front-page stories, [and] more front-page photos" (p. 29). Also, online news sites and online newspapers have looked to modern newspaper design for inspiration (Lowrey, 1999, p. 14).

Now, as newspaper circulation declines, newspapers look increasingly to their designers for ideas and realize that perhaps the only way to preserve the newspaper is to examine its functions, including those that relate to page design. Newspapers continue to experiment with layout, redesigns, and the reduction of paper size (Shafer, 2006). Even the stodgy, traditional, and steadfastly grayscale Wall Street Journal recently added color

and multicolumn headlines to its front page and reduced its total paper size (Morton, 2002; Sutel, 2007).

Therefore, the newspaper and its design should be further examined in journalism research, in consideration of both its development and its eventual fate in a digital society. In an increasingly multimedia environment, the visual aspect is the prime factor, and for a newspaper, page design encompasses that visual aspect. Therefore, because of design's importance to newspapers in a more visually oriented society, this study seeks to examine newspaper page design and its use during the coverage of national tragedies of historical importance.

Three such national tragedies recently occurred within the first decade of the 21st century and left an impact on the American public: the terrorist attacks of September 11, 2001; the explosion of the Space Shuttle Columbia in 2003; and Hurricane Katrina's devastation of the Gulf Coast in 2005.

Three National Tragedies

The Terrorist Attacks of September 11, 2001

Americans awoke on the morning of Tuesday, September 11, 2001, expecting a normal day. That expectation was shattered at 8:45 a.m., when an airplane crashed into the north tower of the World Trade Center in New York City. The hijacked passenger jet's crash immediately ignited the tower into a blazing inferno ("September 11: Chronology of Terror," 2001). Just 18 minutes later, a second hijacked airplane crashed

into the south tower of the World Trade Center, resulting in another blazing explosion. Both planes – American Airlines Flight 11 and United Airlines Flight 175 – had taken off in Boston, Massachusetts.

Shortly after the World Trade Center had been hit, the Federal Aviation Administration halted all flight operations in United States airports, "the first time in U.S. history that air traffic nationwide [had] been halted" ("September 11: Chronology of Terror," 2001). Just three minutes later, at 9:43 a.m., another hijacked plane crashed into the Pentagon in Washington, D.C. Back in New York, the south tower of the World Trade Center collapsed at 10:05 a.m., barely an hour after being hit.

The fourth and final hijacked airplane – United Airlines Flight 93 – did not reach its target, instead crashing at 10:10 a.m. in a field in Somerset County, Pennsylvania, near Pittsburgh ("September 11: Chronology of Terror," 2001). Meanwhile, in New York, the north tower of the World Trade Center collapsed at 10:28 a.m.

The above events occurred in less than two hours. Less than two hours of utter chaos and unimaginable catastrophe ultimately led to the deaths of nearly 3,000 people (Hirschkorn, 2006). Unsurprisingly, it did not take very long to determine that this rapid-fire tragedy was the work of terrorists attacking and killing United States civilians on United States soil. While the attacks certainly caused terror throughout the nation, they also resulted in a patriotic bond among Americans, bringing citizens together to recognize those lost and to rescue survivors and help them back on their feet in the aftermath.

In his address to the nation on the evening of September 11, President George W. Bush said that "these acts shattered steel, but they cannot dent the steel of American

resolve" (Bush, 2001). The national tragedy of September 11 swept the nation, impacting all Americans and changing history forever.

The Explosion of the Space Shuttle Columbia

Much like September 11, 2001, the morning of February 1, 2003, began with the expectation that the Space Shuttle Columbia would return to the earth after a successful mission. While entering the earth's atmosphere that morning, the shuttle suddenly exploded approximately 40 miles above the earth. The explosion killed all seven astronauts aboard the Columbia, spraying "fiery debris" across the Texas sky, which later landed in parts of Texas and Louisiana (Sanger, 2003). It was later determined that the explosion had been caused by foam falling from the shuttle's engines and striking the left wing during launch (Young, 2006).

President George W. Bush addressed the nation later that day, stating that despite the tragic explosion, the American space program would continue to progress. He also honored the seven astronauts killed in the crash, saying, "the same Creator who names the stars also knows the names of the seven souls we mourn today" (Bush, 2003). The Columbia crew included Colonel Rick D. Husband of the U.S. Air Force, Commander William C. McCool of the U.S. Navy, Lieutenant Colonel Michael P. Anderson of the U.S. Air Force, aerospace engineer Dr. Kalpana Chawla, and U.S. Navy doctors Captain David M. Brown and Commander Laurel Salton Clark. The seventh member was Colonel Ilan Ramon of the Israeli Air Force, who not only was the first Israeli to enter

space but also had been considered a national hero more than 20 years before the Columbia mission (Sanger, 2003).

The unexpected Columbia tragedy caused both Americans and Israelis to pause and mourn the seven astronauts who sacrificed their lives during a mission to develop space research.

Hurricane Katrina and the Devastation of New Orleans

In contrast to September 11, 2001, and February 1, 2003, the citizens of New Orleans, Louisiana, were expecting a disaster – Hurricane Katrina, to be exact – to strike their city on August 29, 2005. The Category 5 storm (the strongest type of storm) shifted to Category 4 as it hit land and shifted slightly east, sparing New Orleans from most of the hurricane's severity. Only one levee was damaged by the storm, and at least 55 deaths were reported, most of which were in Mississippi (Treaster & Zernike, 2005).

However, the following morning of August 30 saw that New Orleans had not escaped Hurricane Katrina's wrath, as "it was not water from the sky, but the water that broke through the city's protective barriers that changed everything for the worse" (Treaster & Kleinfield, 2005). Two of the city's levees – which protect the below-sea-level city from the Mississippi River and Lake Pontchartrain – burst, and water "virtually submerged and isolated the city, causing incalculable destruction and rendering it uninhabitable" (Treaster & Kleinfield, 2005).

While many New Orleans citizens had evacuated the city the day before, approximately 10,000 citizens were evacuated to the Louisiana Superdome and thousands

more simply remained throughout the city. The devastating flooding on August 30 stranded the 10,000 refugees in the Superdome, where food and water quickly ran out and the lack of air conditioning and overflowing toilets made matters much worse. Meanwhile, those who had chosen to remain were either dead or stranded on their rooftops or the occasional dry spot, awaiting rescue workers.

By August 31, the death toll had skyrocketed and the number of refugees at the Superdome had doubled to more than 20,000. In addition, "looters ran wild, food and water supplies dwindled, bodies floated in the floodwaters, the evacuation of the Superdome began, and officials said there was no choice but to abandon the city… perhaps for months" (McFadden & Blumenthal, 2005).

On the following day, September 1, 2005, began with a "desperate SOS" from the city's mayor (Treaster & Sontag, 2005). While thousands of Superdome refugees boarded buses to take shelter in Houston's Astrodome, thousands more replaced them at the Superdome as refugees. The number of people at the "filthy, teeming" Superdome had risen to 25,000, where "desperate refugees clamored for food, water and attention while dead bodies, slumped in wheelchairs or wrapped in sheets, lay in their midst" (Treaster & Sontag, 2005). By September 2, the evacuation of the Superdome was slowly speeding up, and the tens of thousands of New Orleans citizens were eventually relocated throughout the United States.

The natural disaster of Hurricane Katrina resulted in the tragedy of numerous deaths throughout the Gulf Coast and of the desperate, terrifying conditions in New Orleans, where hunger, heat, unsanitary conditions, and crime caused tens of thousands of people to truly despair for their lives.

The Events Overall

Each of these nationally monumental events was tragic and nationally significant in its own way. The tragedy of September 11, 2001, was a shocking attack from foreign terrorists on American soil that killed thousands of civilians. The Columbia shuttle explosion was an unfortunate accident that claimed the lives of seven astronauts journeying to serve their respective countries in space research and exploration. Hurricane Katrina was a massive natural disaster that led to the flooding of New Orleans, killing numerous citizens and trapping tens of thousands in chaotic, desperate conditions. The aftermath resulted in criticism of the federal government's response to the storm that has since required the government to re-examine its policies and procedures in responding to a state of emergency.

In breaking these major, historic stories, the news media reported the events in their own characteristic ways. Broadcast news media interrupted regular programming to break the news, often inundating the television and radio with nonstop coverage. Online news media immediately broke the news, updating stories regularly as new details emerged. Newspapers – the focus of this study – broke the news either the day of or the day after the events, flooding their front pages and most (if not all) of the issue with coverage of the events.

Purpose of this Study

Newspaper design should be closely examined to determine its contribution to the preservation of newspapers in today's society. As Schoenbach (2004) points out, now that newspapers are threatened not only by television and radio but also by the Internet, they must "distinguish themselves the best they can by emphasizing their 'unique selling proposition' " (p. 220). One such distinguishing function may lie within the design of a newspaper in covering a historic event like a national tragedy. Broadcast and online news media will always beat newspapers to the punch in covering the major, historically influential stories, but newspapers may serve as a commemorative record of a major historic event that is more permanent, more accessible, and more easily preserved than broadcast or online media.

Therefore, if a newspaper is to serve as a record of a historic event in today's visually oriented society, then the design should respectfully commemorate the event through visual means that coalesce with readers' emotional reactions to the events and their implications. Of utmost importance in serving this function is the front page, the newspaper's "picture window" to which "readers are initially attracted" (Ames, 1989, pp. 6-7) and "an authoritative map of the day's events" (Barnhurst & Nerone, 1991, p. 804). This should be especially true of American daily newspapers reporting the three aforementioned national tragedies – the September 11th terrorist attacks, the Space Shuttle Columbia explosion, and Hurricane Katrina's devastating aftermath – when the front pages likely employed special, more atypical designs to cover the events and their national significance and impact.

As a result, this study examines how front page design (including type, photographs, and layout) differs during a national tragedy and explores the implications of those differences.

CHAPTER II

LITERATURE REVIEW

Prior research supports the argument that newspaper design can reflect the historical impact of the events covered by news stories. According to Ames (1989) and his Total Page Concept (TPC), newspaper design has a very important role in communicating the content of a page and the importance of that content, including the coverage of a major event, when "newspapers with a strong design framework easily respond to the occasion and tell the story" (p. 6). Furthermore, Ames' TPC stipulates that the design elements of a page cannot be considered separate and independent, as they all cooperate in communicating content and importance.

Newspaper Page Design

Middlestadt and Barnhurst (1999) note that the "relationship between form and content" and how the appearance of a message affects audience perceptions are important considerations in design research (p. 265). Lowrey (2003) concurs, writing that design's importance "to reader attention, recall, and interpretation justifies more attention to this subject" (p. 348).

Regarding audience perceptions of newspaper design, Wanta and Gao (1994) found that in order to attract younger readers, newspapers should place less emphasis on stories and more emphasis on the "packaging of content" through design (p. 933). Pasternack and Utt (1986) found that readers considered traditionally designed

newspapers (as of 1986) more informative, responsible, and professional, and readers considered those newspapers with more color and a modern design as more interesting and readable. Smith (1989) notes that while past research "suggests that readers adapt to design changes rather easily" (p. 76), his own research found that readers prefer those newspapers with which they are familiar (p. 84).

In his past research in West Germany, Schoenbach (2004) found that "a clearly structured appearance had a positive impact on circulation and reading frequency" (p. 221). The author also found that a "generous" layout with plenty of white space was preferred and that visual elements were preferred, but only when used deliberately and in moderation (p. 221). Lowrey (2003) found that the quality (based on the judgment of newspaper professionals) of a newspaper's design is predicted mostly by the newspaper's circulation size, while the prominence of graphics in a newspaper is predicted by the amount of control designers hold over a page's final appearance and by a newspaper's competition with other papers in its area (p. 360). According to Schoenbach (2004), "well-structured and aesthetically pleasing papers should be more successful" (p. 220). Siskind (1977) notes that a well-designed newspaper page "is simple, utilizes abundant white space, has relatively few (five or six) stories per page, uses eye-catching photographs and other design elements, and is orderly and straightforward" (p. 55). The author also concluded that newspaper professionals "should be concerned with quality of design as well as contemporaneity" to effectively appeal to readers (p. 61).

Front Page Design

The general conclusion in past research is that newspaper page design is integral to the communication of news events and their importance. This can be taken one step further to the front page, reflected by one editor's response during a 1995 study of front page design trends that the design of a front page is "all dependent on the news for that day" (Pasternack & Utt, 1995, p. 10). If the news industry immediately recognizes an event's historical importance, then the page's design should similarly recognize this historical importance.

The above editor's comment about a front page also helps in narrowing the scope of an examination of page design overall to an examination of front page design, a point emphasized by Bridges and Bridges (1997), who describe the front page as "the reader's window to the tone and the 'spirit' of a newspaper" (p. 834). Because the front page is the first (and sometimes the only) page seen by most readers, the design naturally tends to be more dramatic than interior pages due to the need to persuade readers to purchase the newspaper and read it, especially on a news day of national importance. The most notable design, therefore, should be seen on the front page, not on an interior page.

In their study of front page design trends from 1885 to 1995, Barnhurst and Nerone (1991) found that over the 100 years under study, newspapers tended to reflect a "modern" style, with fewer columns, a horizontal layout, and simplified headline typography (p. 801). Garcia and Stark (1991) studied how readers "enter" a newspaper page and which elements they process the earliest and the most. With regard to front page design, the authors found that readers tend to enter a page first through a dominant

photo, especially if it is a color photo. Readers then tend to process the combined element of the promos (i.e., previews of stories inside the newspaper) and the nameplate (i.e., the title of the newspaper). The authors also found that in color pages, the lead headline is given low priority by readers. However, if color is absent, then the lead headline gains priority. In addition, the study showed that readers tend to process a headline more if a photo is near the headline, and that briefs (i.e., short blocks of text) are processed more than body text (i.e., stories consisting of a greater amount of text), suggesting that readers prefer less text and more visual elements on the front page.

Also, in their most recent study of front page design trends, Utt and Pasternack (2003) found that modular design (i.e., design in which all design elements form rectangular shapes), the use of color, and the inclusion of a central, dominant photo are still among the most common trends in front page design, with the latter two trends paralleling Garcia and Stark's (1991) findings of effective design elements.

As previously mentioned, Ames (1989) argues that the design elements of a newspaper page cannot be separated, but they all must be considered equally important to allow the design to effectively communicate content and importance. Therefore, this study will examine design in terms of the interrelated elements of type, photos, and layout.

Design Elements

Type

Type comes in a variety of forms on any newspaper page, and naturally, the most prominent forms of type – body text and headlines – have been the focus of most type-related research.

Body text. Wanta and Gao (1994) argue that front pages should contain fewer stories and more jumps (i.e., stories that are continued on later pages) to make more room for visuals on the page. On the other hand, Bain and Weaver (1979) found that readers are more likely to read an entire article if that article does not jump, concluding that "a high story count is self-defeating" (p. 57). Similarly, Moses (2000) argues that newspapers should avoid jumping stories because doing so interrupts a reader's concentration on the article, thus running the risk of losing the reader altogether. In addition, Moses writes that text receives far less attention from readers than photographs and headlines, a finding mirroring Garcia and Stark's 1991 study.

Ultimately, Moses (2000) describes text as a double-edged sword: Text is, without a doubt, the "meat" of the newspaper, and without it, a newspaper could not and would not survive as a newspaper. However, on the other hand, text is, as Moses argues, "the last thing people see in the paper" (p. 39) because of readers' natural, initial attraction to photos, headlines, and other visually appealing, visually kinetic elements on the page. To a reader's eye, text is a group of rectangular boxes containing gray letters to

which the reader must actively address his or her attention. The text is the news, but the photos, headlines, and other visual devices attract the reader to certain points on a page, and, if effective, will attract readers to the text of stories with more importance.

Headlines. Smith (1989) suggests that readers' judgments of the appearance of a newspaper are shaped more by headlines than by photos and the inclusion of color. To do so, however, headlines must be effective. According to Harrower (2002), headlines should conversational in tone and written in the present tense and active voice. Furthermore, Harrower enumerates the four functions of a headline on a newspaper page. He writes that headlines "summarize story contents.… They prioritize stories, since bigger stories get bigger headlines.… They entice readers into the text … [and] they anchor story designs (i.e., the layout of news articles) to help organize the page" (p. 23). These four functions of headlines are important to keep in mind when considering the design of any front page.

In addition, Bain and Weaver (1979) found that the importance of a news article is indicated by a headline's size. According to Harrower (2002), headlines tend to be five to ten words in length on most news days, and headlines are typically capitalized regularly (i.e., "U.S. attacked") rather than fully capitalized (i.e., "U.S. ATTACKED"). In her editorial, however, Van Wagener (2005) argues that using a fully capitalized headline results in a louder, more dramatic headline, especially if that headline is a brief phrase, unlike typical headlines. She argues, therefore, that such headlines are typically reserved for "bigger" stories. Van Wagener's (2005) comments align with this study's arguments that design elements – including headlines – are different during a national tragedy, and this study seeks to find statistical support for such arguments.

Photographs

While a newspaper front page's imagery may include informational graphics (e.g., charts and maps), photographs are almost always present and prevalent on the front page. Because of this and because of the scope of this study, the researcher will focus on photographs instead of imagery overall.

Photographs are essential to the success of any modern front page, and past research has found that readers prefer photographs throughout a newspaper. Wanta and Gao (1994) found that due to readers' preference for visuals, "editors should devote more space to visuals and less to the text of stories," and in doing so, newspapers should include more photographs (p. 933). According to Barnhurst and Nerone (1991), U.S. front pages did include more photographs over time throughout the 20th century, and many photographs began to stand alone with cutlines and without accompanying stories.

Schierhorn, Wearden, Schierhorn, Tabar, and Andrews (1999) found that respondents felt that, when compared to digital news formats, newspapers' use of photos is preferable, due to the larger and more attractive appearance of the photos. This is echoed by Utt and Pasternack's (1993) comment that photos (and other graphics) positively influence the appearance of a newspaper page.

Bain and Weaver (1979) found that "the mere presence of a picture is attractive to the reader's eye" (p. 55), and that stories are more likely to be read more fully if accompanying (possibly large) photographs are included. Similarly, Moses (2000) argues that photos "markedly increase both comprehension of text and interest in stories" (p. 39). The author also contends that effective photographs (which she believes are

content as much as text is content) should be coherent with their respective headlines and should communicate "substantively" by giving readers a visual that has importance, not just flair (p. 40). Of course, as Lo, Paddon, and Wu (2000) note, visuals must be used wisely and effectively, as "poor use of graphic items may have a negative effect on newspaper design" (p. 885).

Therefore, based on these arguments, effectively incorporated photos serve two purposes: to attract readers to a page using visual appeal and to communicate content and importance, another reflection of Ames' (1989) emphasis on design elements' communicative purposes.

Layout

Beyond those studies that focus on overall design, little research has focused primarily on newspaper page layout (i.e., the arrangement of design elements on a newspaper page). Utt and Pasternack (1985) found that when competition increases between two daily newspapers within the same city, the more similar their layouts and overall appearance become. The authors also noted that in some cities, "the front pages of the two [competing] dailies are so often similar in format that an untrained observer might not be able to tell the newspapers apart if the flags were concealed" (p. 12).

Middlestadt and Barnhurst (1999) focused exclusively on newspaper page layout for their study and explored the theoretical undertones of page layout. The authors found that readers perceived articles in a horizontal layout (i.e., where most of the elements are

oriented horizontally) as more tranquil, comforting, or pleasant, and readers perceived articles in a vertical layout oppositely.

The number of stories on a page also governs layout. Utt and Pasternack (2003) found that a vast majority – 75.9% to be exact – of newspapers include five to six stories on their front pages on typical news days.

Regarding the actual layout of front pages, past research (e.g., Garcia & Stark, 1991; Harrower, 2002) has noted that the space "above the fold" (i.e., above the horizontal midpoint of a broadsheet newspaper page) on a front page is prime real estate due to this area's position at the top of the page and the fact that newspapers are normally displayed on newsstands folded with the top half of the front page immediately visible.

Obviously, little research has been devoted to layout as a specific concept of newspaper page design, perhaps because it is often considered synonymous with design. This study seeks not only to determine how front page layout differs when a newspaper covers a national tragedy, but also to examine how layout may be considered an individual yet cooperative element of page design.

National Tragedies and the News Media

The final area of past research relevant to this study relates to those studies that examined the news media's effects on the public through the coverage of the three national tragedies under consideration: the September 11th terrorist attacks, the Space Shuttle Columbia explosion, and Hurricane Katrina's disastrous aftermath.

September 11th Terrorist Attacks

Because it is the oldest (and perhaps most influential) of the three events under consideration, the September 11th attacks have received far more research than the other two national tragedies, including research regarding the news media and its coverage of the event. One opinion of this emotional coverage is that the news media were irresponsibly biased in presenting news of the attacks (Eisman, 2003). Eisman argues that "personal bias ran unchecked" (p. 57) during news coverage of the attacks and that this bias was generated by "a misguided sense of patriotism" (p. 64). Eisman also argues that although the news media did benefit from an increase in hard (i.e., more serious) news after the attacks, the media did not benefit from the accompanied increase in "loaded language [that] sensationalised" the news (p. 65). Such "loaded language," Eisman argues, includes the use of violent language which promoted offensive action (i.e., war) as the United States' ultimate reaction to the attacks. Also, Eisman observes that immediately following the terrorist attacks, the news media had essentially placed full blame on terrorist leader Osama bin Laden before there was substantial evidence to do so.

As a counterpoint, Gauthier (2003) argues that the news media *needed* to be emotional and *needed* to present the news in an emotional fashion because the news media's standard of objectivity "may be inappropriate in the case of national tragedies" (p. 37). Gauthier's arguments are based on James W. Carey's (1989) two views of communication: transmission and ritual. The author argues that the news media should adopt a transmission view of communicating the news when there is no national crisis; in

other words, the media should simply present the information as objectively as possible. During a national crisis, however, the news media should adopt a ritual view of communicating the news, in which the coverage should not only present the important facts but also should "bring us together as a community, imparting and reinforcing shared beliefs, values, and goals" (p. 34). The author argues that the news media's ritual communication of the news during a national tragedy helps citizens to cope with their mixed feelings and their numerous questions by encouraging a public discourse that reinforces and strengthens the society when the nation is threatened (p. 36). The news media's ability to benefit the entire populace, furthermore, is due to its widespread accessibility and its use of images and words. Gauthier argues that images "express and evoke emotion" and that words which "describe catastrophic events often express the emotions of the speaker or writer and can arouse similar emotions in the audience" (p. 37).

Gauthier's (2003) arguments are quantitatively supported by Hindman's 2004 study, which found that the American public approved of the news media's coverage of the terrorist attacks and appreciated the "professional and humanistic" characteristics of the news media during this time. Hindman argues that the public "seems to appreciate the professional role of the news media in providing information … [and] also seems to appreciate the news media's role in communicating the crisis's impact on humans" (p. 40).

Ultimately, Gauthier (2003) and Hindman (2004) both support the news media's emotional coverage of the terrorist attacks and suggest that the coverage was beneficial to the American public.

How did this emotional coverage of the terrorist attacks flow into newspapers' front page design? In his subjective, non-scientific overview of September 11th front pages, Nesbitt (2001) said that "the reporting was steady" and that "every newspaper used pictures, used them large, and generally used them well." He also noted the various designs used in front pages throughout the country, describing some as "funeral fronts" where black was used to emphasize the headlines and photographs, some as having dominant art where most of the page was covered in one or more photographs, others as using dominant headlines with highly emotional words that overshadow the photographs, and still others as heavy on reportage, with more body text than any other element. According to Nesbitt, none of the front pages were designed to look like "just another news day," which implies that the design was a crucial, conscious consideration in the creation of a newspaper's first issue to cover this monumental event.

Space Shuttle Columbia Explosion

Little research has been conducted regarding news coverage of the explosion of the Space Shuttle Columbia. Kauffman (2005) found that NASA's public response to the disaster was prompt and effective, with a timely address to the public in the early afternoon following the explosion. Hoffner, Ye, and Ibrahim (2005) surveyed college undergraduates within a week after the disaster and found that the respondents coped with their feelings of anger and sadness by seeking information and support. They also studied how the respondents sought information and/or support from television news and

online news; respondents associated television news coverage of the Columbia explosion with sadness and associated online news coverage of the disaster with anger.

Hurricane Katrina

Research about the media coverage of Hurricane Katrina is steadily increasing, although editorials about the coverage are already numerous. Potter (2005) discussed the behavior of television news reporters during Hurricane Katrina, arguing that "the storm seemed to free TV reporters from their customary role as detached observers, letting them show their feelings and act like human beings without fear of compromising their journalistic integrity" (p. 88). As a stirring example, Times-Picayune reporter Brian Thevenot (2005) discussed his own emotional reaction while witnessing and covering the hurricane's devastation of New Orleans:

> My crying bout that morning had been hardly unique, for myself or for the rest of the New Orleans-based crew. I had watched a woman die on the street.... What broke me wasn't the horror but the beauty of the sight just a few feet away, of refugee Anita Roach defiantly belting out gospel standards, leading a chorus of family members and complete strangers. We locked eyes, a poor black woman who had barely escaped death in the Lower 9th Ward and a relatively wellfed white reporter with a dry Uptown house and a rented SUV.
>
> I lost it. My notebook and pen fell to my sides in my limp arms. I mouthed the words "Thank you" as she finished. She smiled and nodded.

> I walked to her through the filth, and she wrapped me in a bear hug. I sat her down and bled her and her family of the details of their suffering and the strength that now poured out of them in song. I knew I'd never forget the privilege. (p. 26)

Because of their human nature, it should come as no surprise that journalists – especially those reporting from New Orleans – were emotional when witnessing the destruction caused by Hurricane Katrina, and that these emotions carried over into their articles or newscasts, a clear reflection of ritual communication during a tragic event.

As for the numerous tragic images of the hurricane's destruction, Borah (2006) examined the photographic coverage of Hurricane Katrina in the pages of The New York Times and The Washington Post and compared it to the same two newspapers' photographic coverage of the Indian Ocean tsunami of late 2004. She found that the two U.S. newspapers included large, close-up photographs of tsunami victims but included smaller long shots of Hurricane Katrina victims. The author suggests that this difference is explained by Americans' perceived emotional distance from the tsunami and its victims and their perceived emotional closeness to the hurricane and its victims (hence the smaller, less graphic photos of Hurricane Katrina and its victims).

The Past Research Overall

The research agrees that design is now an important consideration in a newspaper's success, especially on the front page, which serves as a gateway for readers to enter the newspaper. The research has determined the various characteristics of

individual design elements and their relation to one another for typical news days. Finally, the research regarding news coverage of the three national tragedies under consideration is young yet growing, and this study's consideration of page design particular to these events will further each event's area of journalistic research.

Therefore, based upon the development of past research in the various fields pertinent to this study (including research regarding newspapers, newspaper page design, and media coverage of the three national tragedies), the researcher formulated six hypotheses, discussed in the following chapter.

CHAPTER III

HYPOTHESES

While Nesbitt's (2001) observations on the emotional design of 9/11 front pages are certainly non-scientific, it can be said that, based on past researchers' findings of emotional coverage of the 9/11 attacks, the front pages covering the attacks (or any other emotionally charged national tragedy) will likely include emotionally charged elements, such as headlines, photographs, and body text. This study, however, examines how these front pages are designed for all three tragedies and how the design is different from what prior research expects from front page design on a typical news day. The content of the elements – be they or be they not emotional – is not considered; instead, the use of these elements within the design of the front page is considered to determine the design's unique nature when compared to typical front page design.

The past research on newspaper page design in general, on front page design specifically, and on the various newspaper design elements is relatively broad, thanks to the fact that the newspaper is the oldest news medium. Still, the realm of design research remains worthy of growth. One area of design that has not been adequately addressed by researchers is newspaper page layout, probably because layout is often "lumped in" with design and considered its synonym. This study addresses page layout as an individual element of the overall design of a newspaper page.

Furthermore, the research on the three national tragedies under consideration is still young and begs for further research. The September 11th attacks have obviously received the most literature to date due to their status as the oldest of the three events and

due to their longstanding impact that is still felt today. This study contributes to that rapidly growing body of research by examining the design of front pages covering the attacks. Hurricane Katrina will likely earn a similarly large body of research in the coming years, and this study adds to that steadily developing body of research. The national tragedy that perhaps will "benefit" (for lack of a better term) the most from this study is the Space Shuttle Columbia explosion, which has received very little research regarding news coverage.

Therefore, based on past research in page design, design elements, and the news media's coverage of the September 11th terrorist attacks, the Space Shuttle Columbia explosion, and Hurricane Katrina, this study furthers the body of research in each of these areas while examining the design – including type, photographs, and layout – of the front pages of U.S. daily newspapers covering the three events under consideration. The especially unusual and unique nature of these three events is undeniable and is expected to be reflected in the design of newspaper front pages. As a result, this study's hypotheses predict that design characteristics are exceptions to the findings of past research on front page design for typical news days.

Before discussing the hypotheses, however, it may be useful to describe how a "typical" front page is expected to be designed, based on prior research. Such a front page would possess the following characteristics (limited to elements considered in this study):

- A dominant headline that is five to ten words in length (Harrower, 2004)
- A dominant headline that is capitalized regularly (i.e., "Headline;" Harrower, 2004)

- Three or more photos (Utt & Pasternack, 2003)
- Five to six news articles (Utt & Pasternack, 2003)

Based on this characteristics and related research, the researcher formulated the following hypotheses:

Type

According to Harrower (2004), headlines tend to be five to ten words in length. Because of the unique nature of a national tragedy, one would not assume that the dominant headlines (i.e., the largest single headlines on front pages) would be longer than this range but would instead use fewer words to quickly and powerfully communicate the impact of the tragedy. As Van Wagener (2005) argues, the dominant headline for a big story should be a brief phrase to achieve the needed "dramatic" effect. Therefore:

> H_1: The mean word count of the dominant headlines of front pages covering the three national tragedies will be significantly less than five words, the expected minimum word count for headlines on a typical news day.

Harrower (2004) also notes that headlines are typically capitalized regularly (i.e., "U.S. attacked") rather than fully capitalized (i.e., "U.S. ATTACKED"). Because of the unique nature of the national tragedies under consideration and the likely benefit of using "all caps" to communicate emotional impact, one would expect that the latter form of capitalization would be true in headlines. Van Wagener (2005) agrees, arguing that the

dominant headlines of big stories should be fully capitalized to be more dramatic and seem "louder" to the reader. Therefore:

> H_2: In dominant headlines of front pages covering the three national tragedies, the instances of fully capitalized headlines (i.e., "HEADLINE") will be significantly greater in number than the instances of regularly capitalized headlines (i.e., "Headline").

Photographs

Past research regarding photographs in newspapers almost universally recognizes that photos are essential to a front page and that a photograph's size is a major factor in communicating the importance of articles (cf. Bain & Weaver, 1979; Garcia & Stark, 1991; Moses, 2000; Utt & Pasternack, 1993; and Wanta & Gao, 1994). Because of the magnitude and impact of the three national tragedies, one should expect that photographs occupy the majority of each front page to increase the emotional, dramatic effect and to communicate the visual impact of these events. The combined area occupied by all non-photographic elements should be less than the photographic area. Therefore:

> H_3: On front pages covering the three national tragedies, the mean area occupied by photographs will be significantly greater than the mean area occupied by all other (i.e., non-photographic) elements.

Furthermore, Utt and Pasternack (2003) note that the majority of front pages run three or more photos on a typical news day. Because this study predicts that the photos of each front page covering a national tragedy will be larger than usual and will thus occupy the majority of the page, it is expected that fewer photos will be used on each front page to allow for this greater occupation of the page's total area. Therefore:

> H_4: The mean number of photographs per front page covering the three national tragedies will be significantly less than three photos, the expected minimum number of photos for a front page on a typical news day.

Layout

Utt and Pasternack (2003) found that a vast majority – 75.9% to be exact – of newspapers include five to six stories on their front pages on typical news days. While one would expect that the number of stories on a front page covering a national tragedy would be far lower than this (most likely one or two, and those one or two are probably related solely to the tragedy), the researcher must formulate his hypothesis based upon the number found in the past research. Therefore:

> H_5: The mean number of articles per front page covering the three national tragedies will be significantly less than five news articles, the expected minimum number of news articles for a front page on a typical news day.

As mentioned before, past research (e.g., Garcia & Stark, 1991; Harrower, 2002) has noted that the space "above the fold" (i.e., above the horizontal midpoint of a broadsheet newspaper page) on a front page is prime real estate due to this area's position at the top of the page and the fact that newspapers are normally displayed on newsstands folded with the top half of the front page immediately visible. Because previous hypotheses of this study predict that headlines and photos will be the dominant features on each front page and that body text will be lower than usual, one would expect that headlines and photos occupy more space above the fold than below the fold, and that body text occupies more space below the fold than above the fold. Therefore:

> H_6: On front pages covering the three national tragedies, the mean area occupied by headlines and photos above the fold will be significantly greater than the mean area occupied by headlines and photos below the fold, while the mean area occupied by body text below the fold will be significantly greater than the mean area occupied by body text above the fold.

Based upon these hypotheses, observation of the front page design of newspapers covering each of the three tragedies are expected to lead to an understanding of how newspaper front pages are designed differently for major historic events. The findings of this study should offer insight into how newspaper design may function in the emotional communication and historical commemoration of these events.

CHAPTER IV

METHOD

Sample used

The sample was retrieved from the Web archives of Newseum, an interactive museum of news and journalism history located in Arlington, Virginia. (The museum will soon relocate to Washington, D.C.) Newseum daily collects digital scans (saved in Portable Document Format, or as PDFs) of nearly 500 front pages of newspapers throughout the world and posts these pages on their website. For days of historic significance, Newseum archives the front pages it collected for the day for public Internet access. The Newseum archived front pages for the September 11th attacks, for the Space Shuttle Columbia explosion, and for six days of coverage during Hurricane Katrina and its aftermath.

Although the front pages in the sample were not randomly chosen and the sample was derived from the Newseum archives, there should be little concern regarding the legitimacy of the sample. The sample is representative because front pages from newspapers in nearly every state and the District of Columbia are present (not to mention a large collection of front pages from foreign newspapers). Furthermore, the sample is highly appropriate because no other resource has as complete a collection of front pages for these three national tragedies as the Newseum, nor is any collection as unbiased (the Newseum receives front pages from all of the major dailies in the United States and

throughout the world). Therefore, the Newseum's front page archives are an excellent source for the sample necessary for this study.

Because this study examined the front page design of three United States national tragedies, only the front pages of newspapers originating in the U.S. were examined. This was done to control for any political, ideological, linguistic, and, of course, national differences between U.S. newspapers and foreign newspapers.

Therefore, the sample consists of 82 front pages dated September 12, 2001, covering the September 11th attacks; 111 front pages dated February 2, 2003, covering the Space Shuttle Columbia explosion; and 243 front pages dated September 2, 2005, covering the aftermath of Hurricane Katrina on September 1, 2005. The Newseum archived front pages focusing on Hurricane Katrina for six days, but to keep this study manageable, only those front pages dated September 2 were chosen. This day of front pages was chosen in particular because, as this study's earlier summary of Hurricane Katrina news coverage described, the day of September 1 featured an extremely large amount of news activity due to the escalating death toll, the chaos surrounding the Superdome, widespread looting, and the New Orleans mayor's "desperate SOS" for relief.

Overall, this study examined the front pages of a total of 436 U.S. newspapers.

Procedure

It is first necessary to explain how and why measurements were obtained and used. For dominant headline word count, the researcher counted the number of words

used in the largest headline on each front page. Word count was measured by how many literal words were used in the dominant headline (i.e., "America attacked" contains two words, "America" and "attacked"). For dominant headline capitalization, the researcher determined whether each dominant headline is fully capitalized or capitalized regularly and recorded the results.

For the photo count on each front page, the researcher counted the number of photos included on each front page and recorded the results. For the article count on each front page, the researcher counted the number of news articles included on each front page and recorded the results.

For H_3 and H_6, which seek to observe the space occupied by certain elements, it was necessary to determine the size of these elements. However, because this study's sample includes digital versions of front pages, the elements are, of course, not in their original size and not in a printed format.

Because of this, the researcher used the photo-editing computer application Macromedia Fireworks 8 to measure the pixel dimensions of each element. To do so, the "marquee" tool was used, which selects a section of an image (in this case, a front page) within a box. When a section is selected, the pixel dimensions – the length and width of the section, measured in pixels of the image – are displayed on the screen. For example, a headline may be selected by the marquee tool by drawing a marquee box around the headline, and the length and width in pixels of the box would be displayed. After measuring an element, the researcher recorded the length and width (e.g., 500 x 500) on the respective coding sheet for a front page (see Appendix C).

After recording the dimensions of an element, the area in pixels for that element was calculated by multiplying the length and width measurements (e.g., 500 x 500 = 2500). Using the element's calculated area, the percentage of the page occupied by that element was calculated by dividing the element area by either the total area of the front page (for H_3) or half of the total area of the front page (for H_6, which considers areas above and below the fold). The total page area and the areas above and below the fold were measured in the same way as individual elements. Also, because a tabloid newspaper does not have a true "fold," the total area of the front page was used in all calculations of area percentages for tabloid front pages. Because this study included only 19 tabloids – 4.4% of the total sample – calculating area percentages in this way was not considered a risk for skewing the results.

The resulting value was then multiplied by 100 to calculate the final percentage of the page area occupied by the element. Calculating percentages results in consistency regardless of the measure used; in other words, if the elements were measured in inches on printed copies of the front pages, the same percentages would be calculated, because the final number used is expressed as a percentage of the page, not in terms of the measure used.

Actual observations of the front pages were performed by the researcher. The area calculations were performed and recorded by both the researcher and a colleague. The researcher ensured that the tools of calculation and the procedures followed were consistent. All data entry and statistical calculations in SPSS 13 were performed by the researcher.

Data Analysis

To test H_1, which deals with dominant headline word count, a one-sample t-test was conducted, with the comparison value set at 5 (a word count minimum of five words is expected on typical news days). A t-test was used because, as Wimmer and Dominick (2006) note, a t-test is a common and appropriate method of comparing means to determine if a statistically significant difference exists. This same reasoning applies for all other instances where a t-test was used in this study.

To test H_2, which deals with the capitalization of dominant headlines, a nonparametric binomial test was used with .50 as the test proportion to determine if there was a significant difference between the two different uses of capitalization in dominant headlines. According to Abdi (2007), a binomial test is appropriate for a situation when the null hypothesis states that two categories offer equally likely events; in this case, the null hypothesis for H_2 is that all-caps and regular capitalization are equally likely to be present among front pages covering the three national tragedies. Therefore, a binomial test was considered the appropriate method of testing this hypothesis.

To test H_3, the researcher measured the total area occupied by all photos on each page and then calculated the area's percentage of the total page, using the procedures discussed earlier in this chapter. The area occupied by all non-photographic elements was calculated by finding the difference between the total page area and the photographic area. A paired samples t-test was used to compare the means of photographic area and non-photographic area for statistical significance.

To test H_4, which deals with the number of photos included on each front page, a one-sample t-test was used, with 3 as the comparison value (a photo count minimum of three photos is expected on typical news days).

To test H_5, which deals with the number of news articles included on each front page, a one-sample t-test was used, with 5 as the comparison value (an article count minimum of five articles is expected on typical news days).

To test H_6, the researcher measured on each front page the total area occupied by all headlines and photos above the fold, the total area occupied by all headlines and photos below the fold, the total area occupied by body text above the fold, and the total area occupied by body text below the fold.

Because it was hypothesized that the area occupied by headlines and photos above the fold is greater than the area occupied by headlines and photos below the fold, the above-the-fold value was always considered the minuend (i.e., the first or leftmost term in a subtraction calculation). If the difference was greater than zero, then it was concluded for that particular front page that the area occupied by headlines and photos above the fold was greater than the area occupied by headlines and photos below the fold. The difference in areas of body text above and below the fold was calculated similarly, although the area below the fold was considered the minuend because it was hypothesized that the area occupied by body text below the fold is greater than the area occupied by body text above the fold. If the difference was greater than zero, then it was concluded for that particular front page that the area occupied by body text below the fold was greater than the area occupied by body text above the fold.

For example, if the percentage area of headlines and photos above the fold equals 50% and the percentage area of headlines and photos below the fold equals 30%, the difference is 20% (50 – 30 = 20). Because the difference is positive, then it follows that the area occupied by headlines and photos above the fold is greater than the area occupied by headlines and photos below the fold. Had the difference been negative, the opposite would be true.

Therefore, a one-sample t-test was performed for the calculated difference, with zero as a comparison value (zero in this case represents equality, or no difference in area).

Using these methods, this study examined how front pages covering the three national tragedies were designed differently than front pages on typical news days.

CHAPTER V

RESULTS

Before addressing the hypotheses of this study, it is necessary to address general details about the overall sample. The September 11th front pages accounted for 18.8% of the total sample, while the Space Shuttle Columbia front pages accounted for 25.5% of the sample, and the Hurricane Katrina front pages comprised 55.7% of the front pages. Most front pages were from newspapers using a broadsheet format (95.6%), while the remaining front pages were from tabloid newspapers (4.4%).

The ranges, means, and standard deviations of the ratio variables observed for this study may be found in Table 1 (see Appendix A).

Word Count of Dominant Headlines

The mean word count of dominant headlines for the total sample equals 3.13. Using a one-sample t-test, H_1 was supported. The mean word count of dominant headlines on front pages covering the three national tragedies is significantly less than the word count minimum of five words expected on typical news days, t (435) = -24.319, p = .000 (two-tailed).

Capitalization of Dominant Headlines

The distribution of dominant headlines according to capitalization (i.e., all-caps versus regular capitalization) was about half and half. Fully capitalized dominant headlines accounted for 48% of the sample, while regularly capitalized dominant headlines accounted for 52% of the sample. Unsurprisingly, therefore, a nonparametric binomial test (using .50 as the test proportion) showed that H_2 was not supported. There is no significant difference in dominant headlines on front pages covering the three national tragedies based on their use of capitalization, $p = .473$.

However, if the capitalization is considered according to each of the national tragedies, there is a difference, namely for dominant headlines of front pages covering the September 11th terrorist attacks. For 9/11, 63% of the headlines were fully capitalized, while the remaining 37% were regularly capitalized. Using a nonparametric binomial test (again with .50 as the test proportion), there is a significant difference at the .05 level, $p = .02$. Because the all-caps headlines are the majority, H_2 is partially supported based on the dominant headlines of September 11th front pages.

The same cannot be said for the Space Shuttle Columbia and Hurricane Katrina dominant headlines. For Columbia, 47% of the dominant headlines were fully capitalized, while 53% were regularly capitalized. In a nonparametric binomial test (again with .50 as the test proportion), there is no significant difference, $p = .569$. For Katrina, 56% of the dominant headlines were fully capitalized, while 44% were regularly capitalized. A nonparametric binomial test (with .50 as the test proportion) results in no significant difference, $p = .054$.

One explanation may be offered for the lack of a significant difference in capitalization. For this hypothesis, the researcher used a binomial test with .50 in all cases as a general "midpoint" test proportion for determining majority, as past research offers little indication of any comparable test proportion for typical news days. Therefore, a significant difference is only found if the two measured proportions are significantly different (or distant) from .50. The fact that nearly half of all headlines were indeed fully capitalized is a significant consideration; it is highly unlikely that such results would be found on a typical news day. Based on this study's use of .50 as a test proportion, perhaps future research will have a better indication of how to test the difference in capitalization among dominant headlines.

Overall, therefore, H_2 is partially supported. Based upon this study's statistical tests, fully capitalized headlines were significantly greater in number than regularly capitalized headlines only on those front pages covering the September 11th terrorist attacks.

Photographic Area Versus Non-photographic Area

The mean area occupied by photographs equals 32.18%, while the mean area occupied by non-photographic design elements equals 67.82%. As one can guess when observing these different means, H_3 was not supported. There is indeed a significant difference between the area occupied by photographs and the area occupied by non-photographic elements (i.e., all other elements), t (435) = -31.368, p = .000 (two-tailed). However, it is the mean area of non-photographic elements that is significantly greater

than the mean area of photographs. The same is true if each individual national tragedy is considered independently, as seen in Table 2 (see Appendix A).

Therefore, H_3 is not supported.

Number of Photos Included

The mean number of photos included on front pages for all three national tragedies equals 4.51. A one-sample t-test shows that there is a significant difference between the mean photo count of front pages covering the three national tragedies and the expected photo count minimum of three photos for typical news days, t (435) = 10.831, p = .000 (two-tailed). However, this difference is not as hypothesized, as there are significantly more photos on these front pages than the expected minimum of three for typical news days.

However, this does not hold true for all events, as seen in Table 3 (see Appendix A). For September 11th front pages, there is no significant difference in photo count, t (81) = 1.415, p = 0.161 (two-tailed). Of course, this does not imply that September 11th front pages featured fewer than three photos on average, as hypothesized. Instead, the mean photo count for September 11th front pages equals 3.35, still above (although not significantly above) the hypothesized limit.

While the differences remain significant for the front pages of the other two events, perhaps the most striking difference can be attributed to the surprisingly high mean photo count of 7.51 photos for front pages covering the Space Shuttle Columbia

explosion. This is likely due to the inclusion of individual photos of each of the seven astronauts killed in the explosion, in addition to other, larger photos on each front page.

Therefore, H_4 is not supported.

Number of Articles Included

The mean number of news articles included on front pages for all three national tragedies equals 2.57. A one-sample t test reveals that this mean number is significantly lower than the minimum of five articles expected for a typical news day, t (435) = -39.40, p = .000 (two-tailed). Therefore, H_5 is supported.

Area Differences Above and Below the Fold

The mean area of both headlines and photos above the fold equals 56.15%. Below the fold, the mean area occupied by headlines and photos equals 32.96%. The mean area of body text above the fold equals 3.88%, while the mean area occupied by body text below the fold equals 21.15%.

The mean areas present a concern that should be addressed at this point. The sum of the mean areas of headlines, photos, and body text above the fold equals 60.03%. This results in a remaining mean area of 39.97% that is not accounted for by headlines, photos, or body text. This may be explained partially by the dominance on any front page of the newspaper's nameplate, which typically spreads across the width of the page and occupies a great deal of space. Other elements that were not measured in this study that

may account for this remaining space include informational graphics, photo cutlines, the textual portion of promos above the nameplate, pull quotes, and white space. Similarly, the sum of the mean areas of headlines, photos, and body text below the fold equals 54.11%. Again, the remaining mean area of 45.89% may be accounted for by unmeasured elements such as informational graphics, photo cutlines, pull quotes, white space, front page advertisements (which were rare yet often as large as the nameplate when they were present), and indeces (which typically offer a table of contents for an issue). These other elements were not considered before observation due to the already large scope of this study, but future research should certainly examine these elements in addition to those observed in this study.

Recall that for each front page, the difference between the mean areas of headlines and photos above and below the fold were calculated, and the difference between the mean areas of body text above and the fold were calculated. The mean difference between the areas occupied by headlines and photos above and below the fold equals 23.19%. A one-sample t-test (with zero as a comparison value to represent equality, or no difference in area) indeed shows that the mean area occupied by headlines and photos above the fold is significantly greater than the mean area occupied by headlines and photos below the fold, t (435) = 22.014, p = .000 (two-tailed).

The mean difference between the areas occupied by body text above and below the fold equals 17.27%. A one-sample t-test (again using zero as a comparison value to represent equality, or no difference in area) also shows that the mean area occupied by body text below the fold is significantly greater than the mean area occupied by body text above the fold, t (435) = 30.936, p = .000 (two-tailed).

Therefore, H_6 is fully supported.

CHAPTER VI

DISCUSSION

As the previous chapter illustrated, three of this study's hypotheses were supported, one was partially supported, and two were not supported.

Type

Overall, the researcher's hypotheses regarding text were supported. The word count of dominant headlines, as expected, is significantly lower for front pages covering national tragedies than the expected headline word count minimum of five words on a typical news day. This finding suggests that during times of national tragedy, headlines are designed to both read and appear more brief than usual to quickly and powerfully communicate the impact of the tragedy. One would expect that a headline like "TERROR" (see Figure 1, Appendix B) is more effective, emotional, and powerful than a headline like "Terrorists Hijack 4 Airliners, Destroy World Trade Center, Hit Pentagon; Hundreds Dead" (see Figure 2, Appendix B). The findings suggest that front page designers during these three events tended to think so, as well. The mean word count of 3.13 further suggests a potential expectation that a dominant headline will contain around three words on a front page covering a national tragedy.

While the researcher's hypothesis regarding the capitalization of dominant headlines was not fully supported, the findings offer highly valuable implications. Although there exists no significant difference in the capitalization of dominant headlines

on front pages covering the Space Shuttle Columbia explosion and Hurricane Katrina, a substantial amount of fully capitalized headlines did exist and were likely greater in number than usual for a typical news day. The lack of a significant difference in capitalized, as explained in the previous chapter, is likely due to this study's use of a "general" test proportion of .50, and future research should develop a more accurate test of difference in capitalization based on this study's measurements.

As for this study's findings, there were significantly more fully capitalized dominant headlines than regularly capitalized headlines on front pages covering the September 11th attacks. In fact, nearly two thirds of all dominant headlines for the September 11th attacks were fully capitalized, much like "TERROR" (see Figure 1, Appendix B). The fact that the September 11th dominant headlines are more likely to be fully capitalized than those of the other two events suggests that the terrorist attacks were considered more important and more emotional than the other two events (and one could easily argue that this is true, based on the attacks' far-ranging effects, still felt today). Coupled with the low word count for all three events – including the September 11th terrorist attacks – then one may conclude that the dominant headlines on front pages covering the September 11th terrorist attacks were shorter and "louder" (thanks to the full capitalization) than usual headlines, likely due to the need to communicate the sheer force and instantaneously realized historical and emotional impact that the attacks had within the span of merely one day. Such a conclusion affirms Van Wagener's (2005) editorial arguments that the biggest stories (such as the September 11th terrorist attacks) require dramatic headlines with full capitalization and brief yet emotional phrases.

Photographs

Perhaps the most surprising finding of this study is that the photographic design elements on front pages covering national tragedies were not significantly different from what one would expect to find on front pages on a typical news day. This study hypothesized that the mean photographic area would be significantly greater than the mean area occupied by all other design elements, due to the seemingly more visual nature of the three national tragedies. However, the exact opposite was true: The mean photographic area was significantly less than the mean area occupied by all other design elements, which suggests that designers and editors tended to not allow the photographic elements to dominate the majority of front pages when covering the national tragedies, although the photographs still had a substantial presence. The mean photographic area was 32.1835%, suggesting that, on average, photographic elements occupied roughly one third of front page real estate – a substantial presence, indeed.

Furthermore, the front pages tended to include more photos than expected. Because the researcher hypothesized that the mean area of photographic elements would be significantly greater than the mean area of all other elements (due to photos' expected immense size), the researcher further hypothesized that the mean number of photos included on front pages covering the three national tragedies would be significantly less than the typical minimum of three photos included on front pages covering typical news days. In other words, because photos were expected to occupy most of the area of the front pages, fewer photos were expected to be used, to allow one or two extremely large photos to dominate the pages.

However, there were significantly more photos on the front pages than the expected three photos, although this significant difference did not hold true for all three events. The September 11th front pages did not feature significantly more or less photos than the expected count of three, although the mean number for 9/11 was 3.35, still greater than the hypothesized limit. The mean photo count was significantly different for the Columbia and Katrina front pages, especially for the Columbia front pages. As discussed in the previous chapter, the mean photo count for the Space Shuttle Columbia front pages equaled 7.51. While this may seem surprising, it is easily explained, as most front pages tended to include one photo for each of the seven astronauts who died in the explosion, as well as other photos to illustrate the event (see Figure 3, Appendix B).

Therefore, regardless of the event, the findings suggest that front pages covering a national tragedy do not tend to include fewer photos than usual, and the photos do not occupy the majority of the page. However, one should not assume that all front pages were typical in their use of photographs. Some front pages easily "stand out" among the three events by including one photo that covers all or nearly all of the page, accompanied by at least one large headline and other, smaller elements (see Figures 4, 5, and 6, Appendix B). Some designers and editors did seem to see a need to communicate the visual impact for these three national tragedies in a distinctive way by allowing photographic elements to pervade the front page. Overall, this study's findings regarding photographs suggest that size and quantity were not key determinants of photographic design on the front pages covering the three national tragedies; instead, perhaps it is the content of the photographs and the unique nature of each event that determines the photographic design on these pages.

Layout

The number of articles included on a front page might be considered a matter of body text, but for the purposes of this study, it is more appropriate to consider it a matter of layout, as the number of articles (or the lack thereof) affects the layout of the page. In this regard, the front pages covering the three national tragedies tended to include fewer articles than the five or more articles expected on a front page for a typical news day. The mean of 2.57 articles suggests that one may potentially expect that front pages covering a national tragedy may tend to include around two to three news articles. While this study did not examine the content of the articles, the low article count may suggest that designers and/or editors decided to dedicate front page coverage exclusively to the national tragedy at hand, while other, unrelated stories for the day were moved to inside pages. Such an assumption begs for future study regarding the relationship between article count, article content, and layout.

This study's examination of the area differences of design elements above and below the fold offered valuable findings regarding layout as a key design element that should not be considered merely synonymous with page design. The researcher found that headlines and photos tended to dominate the area of front pages above the fold, while body text tended to dominate the area of front pages below the fold. This two-fold finding suggests that – at least during the three national tragedies – the often brief, often "loud" (i.e., fully capitalized) headlines and the powerful imagery native to the events were considered by the designers and editors to be the most important information to process first on the front pages and, therefore, the key "ingredients" to inspire readers to

pick up a copy of the newspaper (as the front page's area above the fold is almost always the area of any issue of a newspaper that one sees first).

The fact that body text tended to be greater in the area below the fold further suggests that while text may not be the most important information to process first, it is still often vital to the function of a newspaper's front page. Body text may not convince someone to pick up the newspaper, but once the headlines and photos – preferably above the fold – convince them to do so, then they should ultimately process the body text – likely below the fold. One cannot deny that reading news articles remains the newspaper's primary use, above viewing photos and processing headlines. These findings regarding the layout of headlines, photos, and body text affirm the previously discussed view of these elements held by Moses (2000). Moses argued that text is the "meat" of the newspaper and is absolutely essential, but it also remains "the last thing people see in the paper" (p. 39). The text is the news, but the photos, headlines, and other visual devices attract the reader to certain points on a page, and if effective, will attract readers to the text of stories, especially those of utmost importance.

Finally, this study's findings regarding layout's clear significance in determining the placement of photos, headlines, and body text – at least for the three national tragedies under consideration – extend Ames' (1989) Total Page Concept (TPC). According to the TPC, the traditional design elements – including photos, headlines, and body text – cannot be considered separate, and, as this study illustrates, the layout facilitates this cooperation according to the placement of elements on the page (in this case, through the number of articles and the orientation of elements above and below the fold). Layout, when considered an actual element of page design, becomes an invaluable

factor in the design of a page and, in Ames' (1989) Total Page Concept, is an essential link among its fellow design elements.

CHAPTER VII

CONCLUSION

This study has shown how the design of a front page changes when a newspaper must cover a national tragedy. Some commonalities in front page design exist for the three events observed: the September 11th terrorist attacks, the Space Shuttle Columbia explosion, and the aftermath of Hurricane Katrina. Headlines not only tend to be more brief than usual, but – especially in the case of the September 11th terrorist attacks – they also may be "louder" through the capitalization of every letter of every word. Headlines such as "TERROR HITS HOME" and "EVIL ACTS" for the 9/11 attacks, "WHAT WENT WRONG?" and "ALMOST HOME" for the Columbia explosion, and "OUT OF CONTROL" and " 'A DESPERATE SOS' " for Katrina's aftermath – these headlines are all short in length, yet tall in their lettering; briefly spoken, yet echoing loudly. These headlines instantly communicate the emotions felt by so many people experiencing these events firsthand or through the news. Most front pages used dominant headlines in the same vein as these examples, and their use was for a clearly emotional yet communicative purpose.

In addition, these headlines were not buried on the front page, nor were their photographic counterparts. Headlines and photos tended to dominate the front page above the fold, the first part of any newspaper that most people see first. These events were major stories, with a major impact on the nation and its citizens. One should not be surprised that the explosive headlines and the dramatic imagery took precedence on most front pages, above body text. However, body text remained important to the front page,

as the specific details of the events were available to readers once they were "introduced" to the front page and the event at hand through the page's layout of headlines and photographs. Body text dominated the area below the fold on most front pages, and the number of articles was lower than usual on most front pages, as front page coverage was devoted more (or even exclusively) to the national tragedy at hand.

Furthermore, while some findings were unexpected, they do offer thought-provoking implications regarding front page design during a national tragedy. While front page photos were not fewer overall and did not tend to occupy the majority of front pages, this does not imply that the photos were not still significantly different than those on typical news days – albeit in a different way than this study first assumed. One can easily conclude that the national tragedies featured dramatic and emotionally charged images, whether it be a crowd of New Yorkers fleeing the billowing smoke and debris of a collapsing tower during 9/11, the comet-like explosion of the Space Shuttle Columbia, or a man slumped over in a lawn chair outside the Superdome, dead from starvation, heat, and exhaustion during Hurricane Katrina's aftermath. While this study's observations of front page photos did not find statistically significant differences from expected limits and sizes of photos on a typical news day, one cannot say that the photos on these front pages were not "significantly" different than those photos found on the front page of a typical news day. The photos were "significantly" different because of their dramatic, emotional content that was unlike that of images found on a typical day.

Another example of this lies in the extremely high number of photos used on front pages covering the Space Shuttle Columbia explosion. Most front pages included an individual portrait of each of the seven astronauts whose lives were tragically lost in the

explosion. Instead of overemphasizing the explosion in one enormous photo, designers and editors chose to honor the fallen astronauts, who dedicated – and lost – their lives to space exploration and discovery by including their smiling portraits. Their memory was honored, and the event was not sensationalized on these front pages. In this way, front pages may include significantly more photos than usual to more fully illustrate the event and its emotional and historical impact. Just one photo may not always visually communicate the full scope and breadth of the event at hand.

Limitations of this Study

This research cannot be generalized to all front pages covering any type of national tragedy, nor can it be generalized to those front pages covering any type of major news story that differs from a typical news day (e.g., presidential elections, the outbreak of war, etc.). Because of the magnitude of examination required for each national tragedy, only three national tragedies were included in this research, and one of those events – Hurricane Katrina – was limited to one day of coverage, although the storm and its aftermath flooded news coverage for several consecutive days.

Furthermore, the values used for comparison in the statistical tests were derived from the findings of past research, rather than from actual observations of front pages covering events on a typical news day. Also, some design elements – such as cutlines, white space, and indices – were not examined individually due to restraints of time and scope for this study.

Future Research

Future research should examine the front page design of other national or international tragedies, as well as the front page design of other historic events. The Asian tsunami of 2004 may provide insight into coverage of international events in both American front page design and the front page design of newspapers throughout the world. The opening of the war in Iraq or any U.S. presidential election may provide interesting findings regarding the presence or absence of political bias in page design. Also, research should examine the deaths of historic figures, such as President Ronald Reagan, civil rights icon Rosa Parks, and Pope John Paul II, not to mention the death of President Gerald Ford and the execution of former Iraqi leader Saddam Hussein, which both occurred on the same day and likely "competed" for front page coverage in newspapers throughout the United States and throughout the world.

In addition, future research should observe the content of the various front page design elements and explore the opinions of readers, page designers, and editors to further examine the historical and emotional impact of front page design during a major event and how design commemorates such an event. Such research should offer further support for this study's arguments and conclusions.

Finally, future research should also investigate the front page design of newspapers covering a typical news day for comparison with the findings of this study and past research. Special attention in the research should be devoted to front page layout as an individual element of design and as a link among other design elements, for both historic news days and typical news days. Considering and studying layout in this

manner should help in furthering and developing the body of research devoted to newspaper page design.

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APPENDICES

APPENDIX A:

TABLES

Table 1:

Descriptive statistics of observed variables

Variable	Minimum	Maximum	Mean	Standard deviation
Word count of dominant headlines	1	12	3.13	1.61
Article count	0	5	2.57	1.29
Photo count	1	14	4.51	2.92
Area occupied by photos	2.50%	100.00%	32.18%	11.86%
Area occupied by non-photographic elements	0.00%	97.50%	67.82%	11.86%
Difference in areas of photos and headlines above the fold and photos and headlines below the fold	-51.16%*	88.99%	23.19%	21.99%
Difference in areas of body text below the fold and body text above the fold	-22.49%**	50.58%	17.27%	11.66%

* A negative difference indicates that the area of headlines and photos below the fold is greater than the area of headlines and photos above the fold (i.e., not as hypothesized).

** A negative difference indicates that the area of body text above the fold is greater than the area of body text below the fold (i.e., not as hypothesized).

Table 2:

Paired-sample t-tests comparing photographic area versus non-photographic area

	t	df	p (two-tailed)
All events (N = 436)	-31.368	435	.000
September 11th terrorist attacks (n = 82)	- 7.599	81	.000
Space Shuttle Columbia explosion (n = 111)	-14.515	110	.000
Hurricane Katrina's aftermath (n = 243)	-32.452	242	.000

Table 3:

One-sample t-tests comparing observed photo count to expected limit of 3 photos

	Mean	t	df	p (two-tailed)
All events (N = 436)	4.51	10.831	435	.000
September 11th terrorist attacks (n = 82)	3.35	1.415	81	.161
Space Shuttle Columbia explosion (n = 111)	7.51	14.447	110	.000
Hurricane Katrina's aftermath (n = 243)	3.53	4.717	242	.000

APPENDIX B:

FIGURES



ONLINE UPDATES ON WWW.ADN.COM

■ 21 PAGES: Coverage of Tuesday's attack on the nation inside. See sections A, B, C and E.

50 cents — State Final Edition

Anchorage Daily News

Wednesday, September 12, 2001 — ALASKA'S NEWSPAPER — www.adn.com

TERROR

Thousands feared dead as hijacked jets topple World Trade Center towers

■ CATASTROPHE: Other planes strike Pentagon, crash near Pittsburgh; government suspects Osama bin Laden.

By GEORGE SCHNEEMANN
The New York Times

NEW YORK — Hijacker-operated airliners were each of New York's World Trade Center towers Tuesday morning, toppling them in a hellish storm of ash, glass, smoke and leaping victims while a third jetliner crashed into the Pentagon in Virginia.

There was no official count, but President Bush said thousands of people perished, and as the immediate aftermath the calamity was being ranked as the worst and most audacious terror attack in American history.

The attacks seemed carefully coordinated. The hijacked planes were all on routes to California and [illegible] gorged with fuel, and their departures were spaced within an hour and 30 minutes.

The first American Airlines Flight 11, a Boeing 767 out of Boston bound for Los Angeles, crashed into the north tower at 8:48 a.m. ADT. Eighteen minutes later, United Airlines Flight 175, also headed from Boston to Los Angeles, plowed into the South Tower.

Then an American Airlines Boeing 757 left Washington's Dulles International Airport bound for Los Angeles but instead hit the western part of the Pentagon, the military headquarters where 24,000 people work, at 9:40 a.m. ADT.

Finally, United Airlines Flight 93, a Boeing 757 flying from Newark to San Francisco, smashed near Pittsburgh, raising the possibility that its hijackers had failed in whatever their mission was.

Within an hour of the initial attack on the World Trade Center, the fires in the buildings had grown so hot that first the North Tower and then the South Tower collapsed in an explosion of black, gray dust, molten metal and hundreds of tons of shattered glass. Office workers were seen flying three miles from the collapsing buildings.

In all, 266 people died in the four planes, but establishing a comprehensive death toll could take weeks. Numerous firefighters, police officers and other rescue workers who responded to the initial disaster in lower Manhattan were killed or injured when the buildings collapsed. Hundreds

See Back Page, TERROR

Anchorage looks for answers after East Coast devastation

■ GRAPPLING: City has scares after attacks on the other side of the continent.

Daily News staff

Anchorage awoke Tuesday morning to the jarring news terrorist attacks in New York and near Washington, D.C., with horrific reports of enormous casualties and widely devastation.

Before the sun rose above the Chugach Mountains, the adversaries [illegible] on the other side of the continent began to settle the loss of Americans on a scale not seen since the 1964 Good Friday earthquake — with evacuations, closures, traffic delays and extra police on the street.

Airports were closed statewide and flights grounded, isolating scores of commercial and recreating travelers all over, from business on the Hunt to the season's last tourists.

The Alaska Command jumped to high alert and sharply restricted access to military bases statewide, while fighter jets were airlifted at least once to escort [illegible] a suspicious airliner headed toward the city.

The city activated its emergency command center and filled the streets with a double shift of police and tasked five stations with extra personnel. Curbsides of [illegible] were at heightened alert at Alaska's four highway crossings into Canada.

Police sources were inevitable. About 9:15 a.m., a school bus was evacuated and examined by police after someone

See Back Page, HOW ALERT

Above, a fire ball erupts from the upper floors of the south tower of the World Trade Center after a second plane hit the complex on Tuesday.

At right, an emergency worker helps a woman after she was injured in the terrorist attack Tuesday on the World Trade Center in New York.

Glance inside

TOWERS
■ WHY THEY CRUMBLED: World Trade Center's twin [illegible] withstood the air of the attack and since the, the building designer said. Pages A-2, E

SURVIVORS
■ THEIR TALES: "I heard muffled boom and I thought everything was just going sideways," said Richard D. who was at the World Trade Center Page A-4

TERRORISTS
■ HIJACKED EXPLOIT: Terrorists probably [illegible] their own pilots, [illegible] said, "but pilot, still with a gun to his [illegible], is going to fly into a world crowns," said [illegible] Pilatus, president [illegible] Association of [illegible] Pages A-7

PASSENGERS
■ FINAL FLIGHT: A passenger on United Airlines Flight 93 called [illegible] phone from a locked bathroom: "We are being hijacked," we are being hijacked." Page A-8

WASHINGTON
■ ATTACK HUMBLES PENTAGON: After a plane struck the Pentagon, Rooming [illegible] turned into a massive [illegible] of chaos, [illegible] and terror. Page A-8

MEDICAL
■ WE'RE ALL SOLDIERS: In the war against terrorism, every [illegible] is a [illegible] and every [illegible] is a soldier Alaska. Page B-1

OUR STUDENTS
■ WITNESS TO HISTORY: [illegible] were crowd in East High School teach- [illegible] a state [illegible] U.S. government [illegible] as a chapter of history [illegible] before students' eyes. Alaska, B-1

HELP
■ WHERE TO TURN: Check our listing of how you can help, local church services and other information. Alaska, B-5

SPORTS
■ GAMES CANCELLED: Competitions in Alaska and throughout the country were postponed. Sports, C-1

BUSINESS
■ SLOPE DRILLING CHANGES: On the North Slope, operators restricted access to the oil fields and curbed [illegible] activities. Business, C-1

OUR VIEW
■ A GAPING HOLE: There is [illegible] a gaping hole in the Manhattan skyline — and a gaping hole in the American heart. The nation has been attacked, and the quiet is awakening again. Opinion, B-6

HAMILTON
■ NO SAFE HARBOR: We coordinated [illegible] of commercial airliners to be the weapons in the act of [illegible] the throat of democracy [illegible] every American's life. Opinion, B-6

Full coverage in Sections A, B, C and E.

Figure 1: Anchorage Daily News (Anchorage, Alaska), September 12, 2001



The Washington Post

FINAL

Terrorists Hijack 4 Airliners, Destroy World Trade Center, Hit Pentagon; Hundreds Dead

Bodies Pulled From Pentagon; Troops Patrol District Streets

Bush Promises Retribution; Military Put on Highest Alert

Washington

On Flight 77: 'Our Plane Is Being Hijacked'

U.S. Intelligence Points To Bin Laden Network

New York

'I Saw Bodies Falling Out—Oh, God, Jumping, Falling'

ATTACK ON AMERICA

■ Guide to coverage, A2

■ Latest updates, www.washingtonpost.com

Figure 2: The Washington Post (Washington, D.C.), September 12, 2001



Sunday Bulletin

Volume 143 Issue 33 A Gannett Newspaper FEBRUARY 2, 2003 NorwichBulletin.com 1 $1/Newsstand

'The cause in which they died will continue.'

President Bush, commenting on the space shuttle tragedy

COLUMBIA MOURNED

Debris from the space shuttle Columbia streaks across the sky Saturday. Columbia broke apart over Texas killing seven astronauts minutes before a scheduled landing in Florida.

Shuttle tragedy shocks, saddens world

Columbia doctor trained at Groton

Space shuttle Columbia mission specialist Laurel Clark of Racine, Wis., has her suit checked at crew headquarters in Cape Canaveral, Fla., Jan. 14, in preparation for the Jan. 16 launch. In 1989, she trained at Groton.

Explosion in Texas skies takes 7 astronauts' lives; NASA will face scrutiny

Complete coverage

On the Web

Note to readers

GOODMORNING

WARNING TREND

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NASA roots run deep in Norwich area

FALVEY'S AUTO COMPLEX

PUT A NEW DOOR IN YOUR GARAGE

Figure 3: Norwich Bulletin (Norwich, Connecticut), February 2, 2003

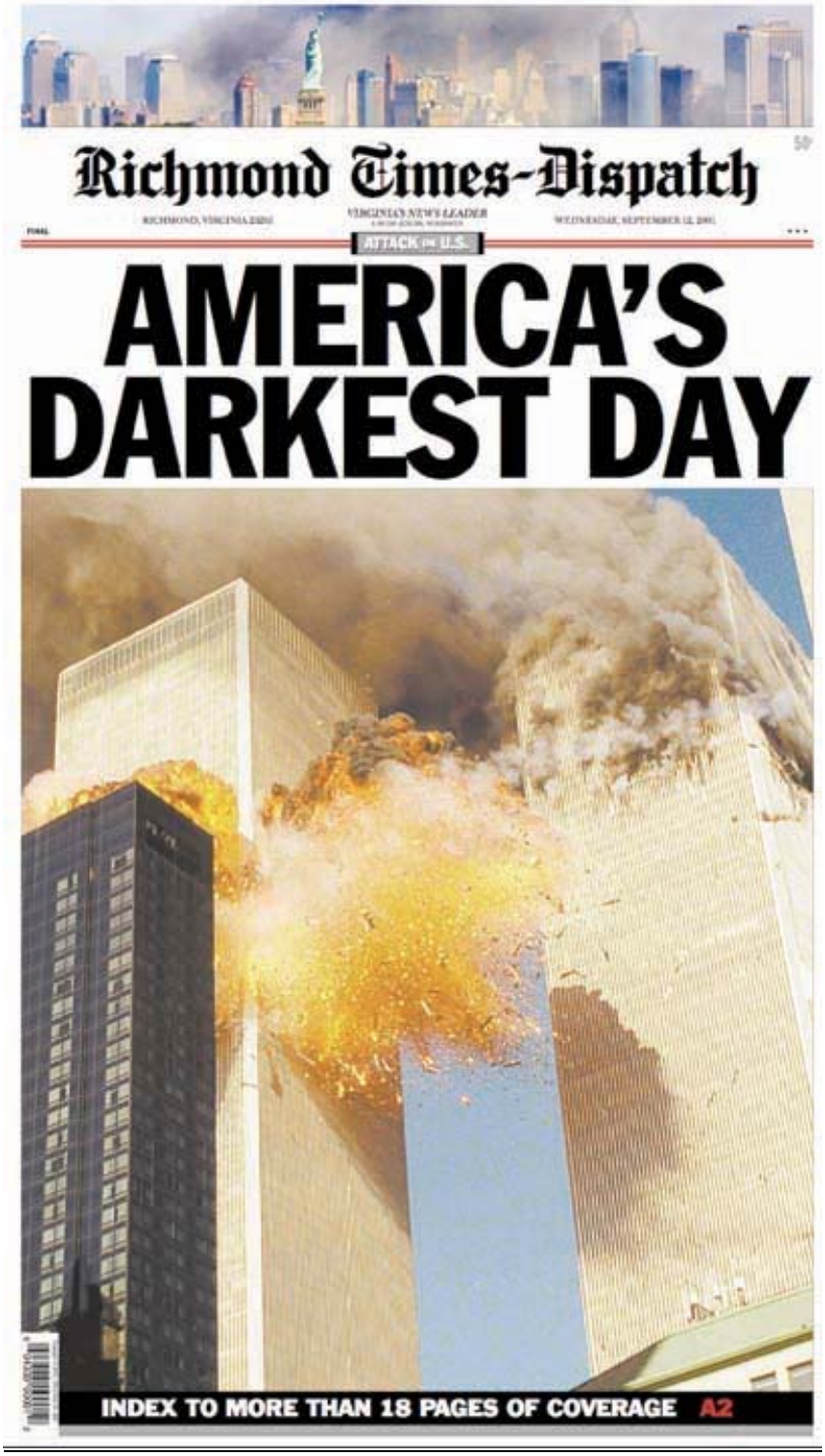


Figure 4: Richmond Times-Dispatch (Richmond, Virginia), September 12, 2001



VOL. 95 NO. 76 SUNDAY, FEB. 2, 2003 GREELEY, COLO. ONE DOLLAR

Greeley Tribune

TEARS IN HEAVEN

Seven die when shuttle disintegrates

BY MARCIA DUNN and PAM EASTON
Associated Press

High over Texas and just short of home, space shuttle Columbia fell to pieces Saturday, raining debris over hundreds of miles of countryside. Seven astronauts perished — a gut-wrenching loss for a country and world already staggered by tragedy.

The catastrophe occurred 39 miles above the Earth, in the last 16 minutes of the 16-day mission as the spaceship re-entered the atmosphere and glided in for a landing in Florida. In its horror and in its backdrop of a crystal blue sky, the day echoed one almost exactly 17 years before, when the Challenger exploded.

"The Columbia is lost," said President Bush, after he telephoned the families of the astronauts to console them.

"The same creator who names the stars also knows the names of the seven souls we mourn today," Bush said, his eyes glistening. "The crew of the shuttle Columbia did not return safely to Earth but we can pray they are safely home."

The search for the cause began immediately.

See SHUTTLE Page A12

THE CREW

Ilan Ramon
William McCool
David Brown
Rick Husband
Laurel Clark
Kalpana Chawla
Michael Anderson

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Figure 5: Greeley Tribune (Greeley, Colorado), February 2, 2003



Figure 6: Newsday (Long Island, New York), September 2, 2005

APPENDIX C:

CODING SHEET

Event
(9 = 9/11; C = Columbia; K = Katrina) _____

Newspaper Format
(B = Broadsheet; T = Tabloid) _____

Word Count in Dominant Headline _____

Capitalization in Dominant Headline
(A = All caps; R = Regular) _____

Number of Photographs _____

Number of News Articles _____

AREA CALCULATIONS

	Pixel dimensions	*Area in pixels*	
Photo sizes	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
	_____	_____	
TOTAL PHOTO AREA		_____	_____**%**

Headlines & Photos Above Fold

_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
_____	_____	
TOTAL AREA OF H&P ABOVE FOLD	_____	_____**%**

Headlines & Photos Below Fold

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

TOTAL AREA OF H&P BELOW FOLD _____ _____**%**

Text Above Fold

_____	_____
_____	_____

TOTAL TEXT AREA ABOVE FOLD _____ _____**%**

Text Below Fold

_____	_____
_____	_____
_____	_____
_____	_____

TOTAL TEXT AREA BELOW FOLD _____ _____**%**

APPENDIX D:

DEFINITIONS OF TERMS USED IN THIS STUDY

Above the fold

The area above the horizontal midpoint of a broadsheet newspaper page.

Below the fold

The area below the horizontal midpoint of a broadsheet newspaper page.

Broadsheet

The traditional, "tall" newspaper, printed on large paper and usually folded when displayed.

Dominant

In design, the largest, most spacious instance of a particular type of design element. If a photograph is the largest photograph on a newspaper page, then that photograph is considered the "dominant photo."

Marquee tool

In an image-editing computer application (e.g., Adobe Photoshop or Macromedia Fireworks), the tool used for temporarily selecting or highlighting a section of an image at the user's discretion.

Minuend

The first or leftmost term in a subtraction equation. For example, in the equation "7 – 5 = 2," the numeral 7 is the minuend.

Pixel

According to the American Heritage Dictionary, "the smallest element of an image that can be individually processed in a video display."

Tabloid

A smaller format of newspaper, printed on smaller paper that is roughly half the size of the paper used to print a broadsheet newspaper.

Word count

For this study, the number of literal words used in a dominant headline (i.e., "America attacked" contains two words, "America" and "attacked").

VITA

Roger Browning Hagy, Jr. is a proud native of the small town of Coeburn in Wise County, Virginia, nestled in the lush mountains of southwestern Virginia. He earned a B.A. in communication and a B.S. in computer information systems from The University of Virginia's College at Wise in 2005, graduating *summa cum laude*. Roger then began his pursuit of a Master's degree in communication, with an emphasis in journalism and special interest in visual and Web communications, at the University of Tennessee, Knoxville.

Roger currently serves as the Assistant Director of College Relations at The University of Virginia's College at Wise, the only branch campus of the University of Virginia and one of the nation's top public liberal arts colleges according to U.S. News and World Report.