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A CONTENT ANALYSIS OF THE PRINT MEDIA'S
TREATMENT OF DISASTER MYTHS *

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Based on newspaper coverage for four disasters--two within the U.S.A., one in Algeria, and one in Italy--Goltz (1984) concluded that generally the media do not present images of maladaptive behavior or disaster myths. This article reexamines Goltz's findings, presents additional relevant data from media coverage of Hurricane Alicia and dissects several important methodological issues. Our conclusion is a counterpoint observation that the mass communication system does contain mythical elements.

For over two decades, students of disaster phenomena have attempted to accurately describe and explain the behavior of individuals, groups, and organizations during the pre-impact, trans-impact, and post-impact periods. As part of this effort, considerable attention has been paid to cataloguing "disaster myths." Fritz (1961) was one of the first researchers to discuss that many popular beliefs about disaster behavior are incorrect. For example, the widely accepted beliefs in large-scale panic, looting and criminal activity, public shelter utilization, disaster shock and general antisocial behavior have been shown to be inaccurate. Later Barton (1970), Dynes (1970) and Quarantelli and Dyne's (1972) further highlighted these mythical elements. Wenger et al. (1975) was able to empirically demonstrate that indeed the public does hold to these mistaken notions. Not only do residents of non-disaster locales subscribe to these myths, but later research found that residents of three communities with extensive disaster experience also possessed inaccurate in-

Why is there widespread acceptance of these disaster myths? The mass media have often been designated as the culprit. Quarantelli and Dynes (1972), Fritz and Mathewson (1957), Wenger (1985), among others, have argued that the media's content presents distorted images of disaster behavior that has the effect of reinforcing a belief in disaster myths among members of the audience.

Unfortunately, the state of research on mass media coverage of disasters had not allowed for any conclusion concerning the validity of these charges. In fact, a National Academy of Science committee concluded that there has been minimal research on mass media reporting of disasters (1980, p.2). Knowledge gaps in the study of media and disasters are pronounced across the board (Kreps, 1980, p.72). Certainly, studies of news processing, intermedia relationships, the role of the media in disaster mitigation and response, and a wide variety of other topics need to be investigated. For purposes of examining the validity of the previously noted charges of "myth perpetuation by mass communication," content analysis of media coverage of disasters is a requisite first step. In fact, a major recommendation of the National Academy of Science workshop on media and disasters was that such kinds of content analyses ought to be given high research priority (1980).

Recently, some students have focused upon disaster content in an attempt to fill this research lacunae. For example, the major ongoing research effort of Scanlon and his colleagues in Canada has examined a variety of issues in mass media coverage of disaster, including the accuracy and nature of media coverage (1978; 1980; 1985). McKay (1983) studied the accuracy of media coverage of brush fires in Australia and determined that, within the limits of normal coverage, the reports tended to be accurate. Turner (1980; 1982) has analyzed the nature of media coverage of earthquake topics in six local Los Angeles newspapers and electronic media. Furthermore, Nimmo (1984) has recently contrasted the thematic nature of the television networks' coverage of the accident at Three Mile Island. Finally, Wilkins (1985) has expanded media coverage of the Bhopal tragedy.

However, for purposes of the issue under consideration, the most elaborate, broad-scaled, and comparative content analysis of disaster coverage has been produced by Goltz (1984). His analysis of the *Los Angeles Times* and *Santa Monica Evening Outlook's* coverage of four

earthquakes is a major contribution to the literature. It also provides data germane to an assessment of the charge that the media perpetuates disaster myths.

Goltz's major conclusion is that, the media, at least in their coverage of domestic disasters, are not prime villains in presenting images of maladaptive behavior or disaster myths. He has found that little attention is paid to mythical elements, and that the overwhelming image is one of organizational and emergent adaptive action.

The data, when aggregated over all four events in the sample, are not consistent with the contention that the news media present an image of community breakdown and chaos in response to crisis is one in which a myriad of formal organizations, particularly governmental units, respond rapidly and effectively to reduce further casualties and damages. (Goltz 1984, p. 351)

This general finding seems to settle the issue, but does it? We think not. The purpose of this article is to examine the findings of Goltz and to present additional data relevant to the issue. We will also consider certain methodological issues that are central to the findings. Finally, we will offer the counterpoint observation that, indeed, the content of the mass communication system does contain mythical elements.

Let us begin by summarizing and discussing the research by Goltz.

GOLTZ: AN OVERVIEW

In his content analysis, Goltz examined the entire coverage of four earthquake disasters that appeared in the *Los Angeles Times* and the *Santa Monica Evening Outlook*. The events were the Alaskan earthquake of 1964, the earthquake in Imperial Valley, California in 1979, the Algerian earthquake of 1980, and the Italian earthquake of 1980. A total of 146 reports (90 from the *Times* and 56 from the *Outlook* were analyzed. All reported events were classified into one of four categories: Institutional-Adaptive, Emergent-Adaptive, Institutional-Maladaptive, and Emergent-Maladaptive. Goltz argues that if the charge of "myth-perpetuation" by the mass media is valid, then the Emergent-Maladaptive category should receive extensive reporting, followed by the Institutional-Adaptive, Emergent-Adaptive, and, at a later point

in the disaster process, the Institutional-Maladaptive patterns (1984, pp. 348-350).

The results, when aggregated over the four events, do not support this expected pattern. Approximately three out of four accounts (73%) reported Institutional-Adaptive behavior. Furthermore, Emergent-Adaptive actions constituted 17 percent of the behavioral sequences reported in the papers. Emergent-Maladaptive behavior was reported in only 6 percent of the 546 behavioral accounts analyzed. Institutional-Maladaptive accounts totaled 4 percent (1984, pp. 352-353).

These findings led Goltz to conclude that disaster myths or social breakdown images are not predominant in news media coverage of earthquake disasters. Instead, the image is one of swift and effective organizational and emergent action to bring relief to the victims (1984, p. 353). Although greater reference is made to Emergent-Maladaptive behavior in accounts of foreign disasters, the overall image is one of positive, rational, organizational and individual behavior.

Before closing the book on this issue, however, a few observations must be made concerning these findings. First, although discussing the issue as one involving the "mass media," Goltz, in fact, has studied only newspaper coverage. It may be argued that myth dissemination is actually more prevalent within the electronic media, particularly television. Second, the generalization of the finding may also be weakened by the distortion in the sampling. Although four different earthquake events are studied, coverage of the Alaskan earthquake constituted 61 percent of the entire sample and 85 percent of the domestic stories. It should be noted that Goltz is aware of these two limitations to the generalization of the study's findings (1984, p. 353).

Two additional issues deserve further comment. First, there is the problem of operationalization. It is not clear that the dimension of adaptive-maladaptive behavior actually differentiates behavioral allusions to myths from other forms of behavior. Consider the case of institutional-adaptive behavior. It is defined as "organized normative activities which promote effective emergency response" (1984, p. 349). As such, a number of organizational activities that can be viewed as effective can still have the latent effect of reinforcing disaster myths. For example, discussion of organizational activity involved in the massive opening of shelters or provisions of formal aid may distort actual victim shelter and

helping behavior. Furthermore, reports that organizations are involved in social control activity can reinforce the myth that antisocial and deviant behavior are prominent problems in disaster. In fact, in Goltz's analysis, 8 percent of the organizational adaptive responses involved law enforcement activities, such as patrolling, cordons, and restrictions (1984, p. 351). These types of accounts could be interpreted as supporting mythical images and included with the emergent-maladaptive elements.

Furthermore, it is not clear that the maladaptive category also has a clear, referent to disaster myths. Defined as "activities of collectivities which block, delay or impede effective emergency response," the category would appear to include elements of behavioral response in addition to myths. For example, it is not a myth that informational and material convergence occur upon the disaster site; however, Goltz classified convergence as a myth. The "myth" refers to the public perception that sending food, clothing, and supplies or going to the site to aid the victims are appropriate responses. It is not clear that reference to convergence behavior, per se, supports inaccurate images of disaster. Similarly, students of disaster and collective behavior have long realized that rumor behavior occurs during periods of crisis (Shibutani 1966; Turner and Killian 1972). References to rumor behavior should not automatically be considered as "mythical." Therefore, the conceptual problem is one of a lack of fit between the adaptive-maladaptive dimension and mythical images. Clearer delineation of the concept of "effective emergency response" might clarify this issue.

Second, Goltz has presented us with a purely quantitative analysis of the content. By observing that only 6 percent of the behavioral accounts referenced emergent maladaptive behavior, he concludes that the media do not perpetuate myths. However, the issue is not that simple. These 6 percent actually represent about 33 behavioral accounts. What is important is to examine the context of these references. How much space was devoted to these mythical elements? Were they given prominent coverage? Did they appear on the front page, or were they buried? Only a more qualitative analysis can answer these questions.

This paper reports upon a study of local and national print coverage of one disaster, Hurricane Alicia. It is an attempt to determine if the

findings of Goltz can be observed in another setting. Also, it represents an effort to further determine, through both quantitative and through qualitative content analysis if, in fact, the media do disseminate disaster myths.

RESEARCH METHODOLOGY

The Event

Hurricane Alicia impacted the Galveston-Houston area in the morning of August 18, 1983. It was a major hurricane that resulted in 21 deaths, about 1,530 injuries, and property loss in the billions of dollars. Within the county, an estimated 410 homes were destroyed and 2,293 damaged. Businesses damaged or destroyed numbered about 730; 486 apartments were destroyed or damaged.

Although these numbers may appear to be large in absolutely of Houston and Harris terms, it must be remembered that the city of Houston and Harris County is one of the fastest growing areas in the United States. The population in the SMSA in 1980 was about three million, with about two-thirds residing within the city. Therefore, 1,500 injuries represents less than .001 percent of the population; 21 deaths are about .000007 percent. Similarly, the destruction and damage of about 3,000 homes and apartments represents less than one percent of the housing stock. The event, however, did receive extensive press coverage, both locally and nationwide.

The Sampling Units

Both local and national print coverage of the event were studied. Local coverage involved a content analysis of the hurricane coverage of the *Houston Post*. The *Post* is a large-circulation, morning-edition, daily. Its news infrastructure is elaborate and includes all major wire services and syndicates. It has adopted the currently popular magazine format, and its daily editions usually have five or six sections. National media coverage included all coverage appearing in the *New York Times*, *Washington Post*, *USA Today*, *Time*, and *Newsweek*.

The Sampling Frame

With respect to local coverage, the analysis examined all issues of the paper from August 16, 1983 until August 31, 1983. This period roughly covers the three days prior to impact until two weeks after impact. The analysis was limited to the first section of each edition. Section A includes the major, hard news stories. In addition, it included over 98 percent of all the stories published about Hurricane Alicia.

The national sampling frame included the same time period. However, in this case all of the stories ran from August 16 to August 24, 1983. Every story that appeared in the three newspapers and two news magazines was analyzed.

The Analyzed Dimensions

Both local and national content were subjected to identical content analyses. The study was not limited to an examination of disaster myths; it attempted to provide broad data on media coverage. The stories were analyzed on several dimensions that were both quantitative and qualitative in nature. These dimensions included the heading, placement, column inches, photographs and graphics, percentage of the news hole represented by the story, source, dateline, and location. Furthermore, the disaster period, agent-generated activities (such as planning, mitigation, warning, evacuation, and search and rescue), and response generated activities (including convergence, social control, and assignment of blame) for each story were classified. In addition, each story was classified by type, i.e., whether it was a "hard news" or "soft news" piece as opposed to "hard analysis" or "soft analysis," as well as the form of the story, i.e., whether it was an expressive and/or instrumental piece. General themes that emerged from the series of articles were inductively determined.

Most central to this discussion, the inclusion of disaster myths, was also noted. In all of the stories, any reference to the following specific behaviors was listed: 1) panic, 2) looting, 3) martial law, 4) massive evacuation, 5) heightened criminal behavior, 6) disaster shock, 7) massive shelter utilization, and/or 8) other. An individual story could discuss none, one, or more of these myths. In addition, the nature of the

discussion was analyzed. Each reference to the above behavior was classified as being pro-mythical if it reinforced the popular misconception, anti-mythical if it provided information to challenge the popular stereotype, or neutral.

All of the coding of the content was in a form that allowed for statistical analysis. A subsample of the material was used to measure inter-coder reliability. The degree of agreement ranged from a high of 100 percent for the most easily quantified material, such as source, placement, and location, to a low of 82 percent for the general themes.

THE FINDINGS

Local Coverage

How extensively did the *Houston Post* cover Hurricane Alicia? The sheer volume of its coverage was massive. During the 16 days of coverage, 160 separate stories totalling 9,646 column inches were produced. This material constituted 28.1 percent of all the news that appeared in Section A during this time. Furthermore, 34 stories, or slightly more than two a day, appeared on the front page. In addition, 60 photographs or graphics were included in the coverage. Heavy staff involvement in Alicia coverage was indicated in that 38 different bylines appeared. In sum, this massive coverage averaged ten stories of approximately 600 column inches each day. The material totalled over 180,000 words. From the first day until the last issue, an Alicia story always appeared on the front page.

To what extent did this extensive coverage discuss various disaster myths? To examine this question, all stories were classified by the disaster period in which they appeared. Coverage was divided into three time periods: pre-impact, crisis, and early recovery. The pre-impact period covers the three days prior to the arrival of the storm. The crisis period includes the three issues that appeared from Friday, August 19 through Sunday, August 21, 1983. (Although the hurricane arrived in the early morning hours of August 18, 1983, the edition of the newspaper published that day must be considered as a pre-impact issue. The *Post* is a morning newspaper, and the copy was produced prior to the storm.) The recovery period begins on Monday, August 22, and continues until

the end of the coverage period. The arbitrary designation of Monday as the beginning of the recovery period is based upon the attempt that was made in Houston to reestablish normal commercial and social activities after the weekend. Each story was then examined to see if it discussed various disaster myths. The results are presented in Table 1.

Table 1
Disaster Myths Noted in Hurricane Alicia Stories by Disaster Period

Myth	Preimpact		Crisis		Recovery		Total	
	N ^a	Percent ^b	N	Percent	N	Percent	N	Percent
Panic	3	9.7	0	0.0	0	0.0	3	1.7
Looting	2	6.5	10	14.7	5	8.3	17	10.7
Martial Law	0	0.0	0	0.0	0	0.0	0	0.0
Mass Evacuation	8	25.8	4	5.9	0	0.0	12	7.5
Increased Crime	2	6.5	8	11.8	5	8.3	15	9.4
Disaster Shock	0	0.0	1	1.5	0	0.0	1	.6
Mass Sheltering	1	3.2	5	7.4	4	6.7	10	6.3
None	20	64.6	46	67.6	47	78.3	113	70.6

^aRefers to the number of stories that discussed a specific myth.

^bStories may discuss more than one myth, so percentages do not sum to 100.0.

Approximately 70 percent of the stories make no reference to any myth phenomena. Furthermore, only brief, passing references were made to any behavior involving panic, martial law, or disaster shock. Certainly, these were not major themes. In addition, the treatment of these topics was not always pro-mythical. A front page story on August 17 states that the Mayor of Galveston feared he would panic residents if he called for a total evacuation. On the following day, a story on page 22A quoted a state senator as blaming the National Weather Service for causing "undue panic" by its dramatic pronouncements on the strength of the storm. However, the third story was anti-mythical. It noted that there was no panic and that "people were calmly packing their belongings and pulling onto uncrowded Texas 185" (1/18, 21A).

To this point, our findings support those of Goltz. Most of the stories do not mention myths and certain myths are either ignored or treated in an ambivalent fashion. However, other topics that are often viewed as myth were more frequently discussed.

Consider the myth that most evacuees utilize public shelters. Ten stories discussed the need and demand for sheltering. Of these, two stories were clearly anti-mythical. One story noted that only about 1,000 people used public shelters in Galveston. The other reported that some shelters basically were empty. Three stories, however, were inherently mythical. One inferred a very heavy need for short-term shelters and another noted a similar need for "cooling centers" (1/18, 17A; 8/24, 16A). The third mythical story was an extensive human interest piece on life in a public shelter that focused upon a woman who had spent many days in them (8/20, 22A). The remaining five stories were basically neutral items that simply noted the number of people who were housed in the various public shelters. Estimates of between 20,000 and 40,000 were given by various groups. While these were simply reported, they leave the impression of rather massive sheltering, without also noting that these figures amount to less than one percent of the area population.

The discussion of mass evacuation shows a similar mixture of factual and mythical treatment. Of the 12 references, four were anti-mythical. A front page story on August 17 noted that very few people were leaving the coast. Similarly, on the next day, a story on page 20A observed that "no accidents were reported" from the evacuation. On August 19, a story on page 18A stated, "In Galveston, officials estimated that more than 50,000 residents rode out the storm. ... Thousands of residents stayed in their homes, which they fortified and stocked with provisions, instead of fleeing the storm." Finally, a story on Monday observed, "It was clear on the drive to Galveston that the national radio reports of massive evacuation were absurd (8/21, 1A).

Conversely, five stories presented an inherently mythical image of mass evacuation and its attendant dangers. For example, on August 18 a story on page 21A noted that most people had evacuated, and a companion piece on page 22A quotes a resident as saying, "I'd rather fight a hurricane than all those crazy people on the road." Finally, another story on the same page was headlined "Allen Evacuation Stressed Need for Preparation" and described the massive traffic jams and problems that may have occurred in Hurricane Allen.

Three stories were mixed, offering both anti-mythical and mythical elements. One story captures the essence of these treatments and also indicates the use of myths to justify public policy. On August 19, a major

story on page 12A discussed the Mayor of Galveston's decision not to order an evacuation. It stated, "Mayor Manuel said ordering people to evacuate via highway escape routes would have been more dangerous than having island residents stay in their homes." Therefore, while a number of stories did accurately report on evacuation, the image still does emerge that mass evacuation is a common phenomenon, and a dangerous one, at that.

A total of 15 stories discussed an increase in criminal behavior. In this instance, the treatment was predominantly consonant with mythical images of social breakdown and chaos. Only one story was anti-mythical. This was a brief reference on August 18 that police had reported that crime is decreasing. This story appeared on page 21A.

The remainder of the stories stressed criminal activity. These 14 articles were given prominence; six appeared on the front page and one on the second page. For example, a front-page story on August 18 quoted a police captain that individuals were impersonating Civil Defense officials and going door-to-door and urging that residents evacuate; later they would return to loot homes. Other front-page stories noted that a curfew was in effect and that police and National Guard were patrolling; 23 people had been charged with burglarizing storm-damaged businesses (8/21, 1A). On August 21 another front-page story "warned that people were trying to sell the free Red Cross cleanup kits.

The most extensive and continuing coverage, however, was of price-gouging. A total of nine stories focused upon alleged price-gouging by firms. On August 19, a front-page story mentioned possible price-gouging and a report on page 15A quoted the State Attorney General that his agency was going to investigate any reported cases. Three stories appeared in the next day's paper. A front-page report noted that "two dozen instances of price-gouging were being investigated." On page 23A, a story quoted the Chief of the Attorney General's Consumer Protection Division as saying that "price-gouging generally accompanies hurricanes!" On August 20, a second page story quoted a store owner as saying, "A lot of people are price-gouging." Additional stories continued this theme.

What was the outcome of this major price-gouging episode? The final price-gouging story was buried on page 26A on August 26. It noted

that "the Texas Attorney General is negotiating and may sue four businesses (two tree-trimming companies, one ice supplier, and one glass company) for price-gouging." Four! Of the hundreds of thousands of businesses in the area, only four were being investigated. None of the firms had been charged, the names of the companies never appeared in print, and negotiations were underway for restitution. These contextual factors, however, were never mentioned by the paper. The image of crime and price-gouging was starkly painted.

Compared to the discussion of looting, however, the treatment of crime appears rather anti-mythical. There was a fascination with looting in these papers. About 10 percent of all the stories mentioned it. Also, the issue was given prominent placement. Of the 17 stories, eight appeared on the front page. Although at least one story reporting looting appeared every day from August 18-24, coverage was most intense from August 18-20; these are the three days immediately preceding and following impact. Eleven stories mentioning looting appeared during these three days.

The first reference to looting appeared on the front page of the August 18 edition. The Harbor Master at the Galveston Yacht Basin is quoted as saying, "We are keeping a look-out for looters. This is private property and we will be carrying weapons." An additional story on page 21A quoted victims about previous looting during other hurricanes.

On the day of the impact, August 19, five stories discussed looting; two were on the front page. The lead story noted that police were patrolling to prevent looting and quoted a police spokesperson that 40 arrests for looting had been made in Houston, 19 in Galveston, and 11 in Texas City. The other front-page story also noted that police cars blocked off each street leading into the Houston business district to prevent looting. Two brief stories on page 18A reported that looting was occurring in Humble and quoted a citizen who claimed his house was sacked during Hurricane Allen three years before. This year, he said, "People stayed in homes to protect against looting. Maybe the looters will be back." Finally, an entire 92-inch story was devoted to looting on page 19A. Under the headline, "Guard, Patrolmen Sent to Galveston to Prevent Looting," it is reported that 100 National Guard troops and 40 additional highway patrol troopers were sent to Galveston. "Gov. Mark White said in Austin that the aid was given to Galveston after several

businesses were reported looted after the storm passed." Sporadic reports of looting in Houston were also noted. The Houston Chief of Police is quoted that 40 arrests had been made. Also, a Houston police dispatcher said looting was reported in a "tire store, at a service station, and at a grocery store."

Saturday, August 20, found even more intensive coverage. Three of the four stories that mentioned looting appeared on the front page. The lead story noted that "looters added to problems in Galveston, which has imposed a dusk to dawn curfew and is patrolled by rifle-toting police and National Guardsmen. Twenty-two people were arrested for looting." The story quotes a police lieutenant: "There were people roaming all over the streets, pushing grocery carts and holding flashlights." "Almost every convenience store was hit," added Patrolman R.L. John. "If the windows weren't already broken, they broke them." (The same quote appeared in another story on page 24A, although the phrase "every convenience store" was reported as "every 7-11 and Stop & Go.") Other looting reports appeared in another front-page story. The major front-page looting story, however, appeared under the headline "Looters Had Field Day Robbing Liquor Store." This was an 81-inch story describing the looting of one liquor store. It noted that "as many as 40 people entered the store and ripped off liquor, cosmetics, watches and other goods." The paper did mention that only eight were arrested and that several cases originally thought to be looting were burglaries. Finally, on page 24A, a 64-inch story was headlined "Looters Arrested as Efforts Begin to Clear Debris, Restore Isle Power." It again discussed Galveston looting. "Roaming bands of looters, some of them pushing grocery carts, have been arrested." It states that 35 arrests had been made on Wednesday and Thursday. The colorful quotations that appeared in the lead story were basically reprinted here.

During the next two days, brief mention was made of additional looting in other, nearby communities. These reports were included in two stories that appeared on the first and second pages.

What was the disposition of these looting problems? On August 23, a page 3A story of 42 inches discussed court cases involving looting charges. It was reported that "four men received probated sentences and one ex-convict received a prison sentence for looting businesses." The story described a 17-year old who had been found guilty of looting and given

a suspended sentence and fine. The story does offer: "Most of the cases prosecutors have labeled as looting cases stemmed from burglaries late Thursday or Friday." One court had 18 looting cases that resulted from only four incidents; one additional looting case went to another court.

One might imagine that this story would end the looting coverage in the paper; it did not. Over the next two days, three additional stories briefly mentioned reports of looting, or that residents feared looting.

We have gone into considerable detail about the myths of criminal behavior and looting. We have done so because the coverage of these two issues, although anti-mythical or neutral with regard to certain myths, was very extensive, prominent, and consonant with popular misconceptions. Of course, the staff of the paper was simply reporting on the activities of its sources. Most of these accounts reference and cite law enforcement authorities. Therefore, media personnel might shield themselves behind the "mirror metaphor," claim objectivity, and argue that they only report the news, not create it. Perhaps, but then again, perhaps not. After a deluge of treatment on criminal price-gouging and looting, it is noted that only four firms were being investigated for the former and that only four businesses were "looting cases." These stories were buried.

Furthermore, it is interesting to compare the daily instances of price-gouging and burglary that occur among the hundreds of thousands of Houston area businesses in non-disaster periods.

Although data on price-gouging are not available, statistics on burglaries and robberies are. Within the city of Houston, 10,270 robberies (28.1 per day) and 41,613 burglaries (an average of 124 each day) occurred during 1983. In Galveston, there was a total of 1,950 robberies and burglaries during 1983 or an average of 5.7 per day. Therefore, within just these two cities within the metropolitan coverage area of the local newspaper, an average of 158 burglaries and robberies occur each day during normal periods. In fact, during the 16 days of coverage, over 2,000 burglaries and robberies could be expected (Uniform Crime Reports 1983, p. 108). The four looted businesses pale in comparison.

By not placing such stories within a social context and by giving them more prominent treatment, the myth of heightened criminal activity and antisocial looting is supported.

In sum, within the local newspaper coverage of Hurricane Alicia, we have observed considerable attention to issues that reinforce and disseminate disaster myths. To what extent do mythical elements appear in the national coverage of the hurricane?

National Newspaper Coverage

All of the stories appearing in the *New York Times*, *Washington Post*, and *USA Today* were analyzed. A total of 32 stories ran from August 16 to August 24, 1983. *The New York Times* contained 13 stories totalling 878 column inches. *The Washington Post* ran only six stories, but these encompassed 781 column inches. *USA Today* produced 13 stories, however, these only totalled 628 column inches. Furthermore, a total of 39 photographs or graphics accompanied the stories in these three papers. Ten appeared in the *New York Times*, 14 in the *Washington Post*, and 15 in *USA Today*.

A total of 35 references to popular misconceptions about disaster behavior appeared in these 32 articles. Often, however, the references were only a sentence or two within a story; they did, though, appear with regularity. About 70 percent of all the stories made mention of at least one myth. No myths appeared in nine of the stories (28.1 percent).

Some mythical elements never appeared, including references to martial law and disaster shock. Furthermore, in stark contrast to the local newspaper coverage, little attention was given to price-gouging and other criminal behavior. A single story in the *Washington Post* on August 20 noted a reported incident of a store selling batteries for five dollars each.

There were only two stories that discussed panic. Both appeared in the *New York Times*. In a pre-impact story, it is noted that 15,000 Texans "were warned to evacuate and moved without panic." Clearly, this is an anti-mythical statement. However, five days later, an article appeared quoting Mayor Manuel of Galveston with a contrasting concern; i.e., the danger of trying to evacuate 65,000 people from the island. However, between this reference to a "non-event" and the constant recurring theme of riding out the storm, which appeared in the coverage, the image of panic was not persistent.

In all three newspapers throughout the pre-impact and crisis periods, considerable attention was paid to the related problems of mass evacuation and mass sheltering. Forty percent of all articles gave estimates of evacuation figures ranging from just thousands to 55,000. Regardless of the estimate, the image portrayed was one of mass evacuation; for example, no references were made to the total population within the potential impact area. It appears as though all but the long-term residents and "really tough guys" evacuated.

The related issue of mass sheltering was discussed in about 20 percent of the stories. A common consensus of all the newspapers was that there were about 40-50 Red Cross shelters that were bombarded by 7,000 evacuees. Although the newspapers' estimates of the number of evacuees exceeded this number, at no time did any of the newspapers make reference to where the other evacuees had gone. The prevailing image is that all evacuees turned toward public shelters. Although it is highly probable that the majority went to the homes of friends, relatives, or to motels, the newspapers never conveyed this image.

Finally, references to looting appeared with great frequency. A total of 12 stories discussed looting (37.5%). Most of this coverage occurred during the crisis period. Again, often only a sentence or two of the entire article mentioned looting, however, the manner in which it was presented is critical.

Actual figures were given as to the number of arrests. In the *New York Times*, estimates ranged from 40-70 arrests, whereas *USA Today* quoted 20-40 arrests, and the *Washington Post* estimated 22.

The manner in which the *Washington Post* made reference to this behavior is notable. On August 20, a front-page picture appeared of two national guardsmen carrying rifles and walking through a deserted area of debris. The caption read, "Texan National Guard patrol section of Galveston to prevent looting of houses and stores damaged by Hurricane Alicia Thursday. See page A-2." On page 2, an article of 163 column inches appeared. Only a single line in this story discussed looting. It noted that 75 national guardsmen and the local police of 440 members were patrolling to protect from looting. The myth of massive looting, however, was reinforced by the front-page pictorial treatment.

In sum, like the local coverage, the accounts of Hurricane Alicia that appeared in the national newspapers included a number of mythical ele-

ments. In particular, looting appeared prominently in these stories. Obviously, the sheer magnitude of the coverage was less in the national papers (no more than 900 column inches in any national newspaper as compared with over 9,000 for the *Houston Post*). As a result, any references to myths assume a relatively more prominent position in the national stories.

National Magazine Coverage

Time and *Newsweek* magazines each carried one story about Alicia. Both articles appeared on August 29. The *Newsweek* article was 115 column inches or 3 percent of the news hole. The *Time* article was 154 column inches or 4 percent of the news hole. The *Time* article, however, was not exclusively devoted to Alicia. The title of the article read, "Texas Takes a Hurricane, The Midwest Simmers, The West Floods."

On most accounts, the magazines covered the event in a manner very similar to the newspapers. The themes which emerged were the same: the Mayor-Governor dispute, the disaster subculture, and destruction estimates.

Certain disaster myths were also present. Looting, curfew violation, and mass evacuation were noted. *Newsweek* reported the evacuation of 42,000 people with many in Red Cross shelters. *Time* magazine quoted the figure of 20,000 residents being sheltered at 83 Red Cross shelters. References to looting in the *Newsweek* article were extensive. Of the five photographs that accompanied the article, one was of a man standing in the center of his almost completely destroyed supermarket. The caption read, "Standing Guard over the Wreckage of a Galveston Supermarket." The article stated that the National Guard, the Texas Highway Patrol, and the local police were patrolling for looters. As of that time, there had been 100 looting incidents and 80 arrests for looting.

There was one notable difference between the coverage of the national newspapers and magazines. This difference appeared in the pictures and graphics which accompanied the stories. Throughout the newspaper coverage, pictures and graphics played a significant role in the story telling. Of the 2,287 column inches that appeared, 915 (40.0%) were pictures or graphics. Of the two magazine articles, however, 54.6 percent of the 269 column inches were devoted to pictures. They were

all color photographs of areas which had been destroyed. In other words, the magazines told their stories more with pictures than with words, whereas the newspapers relied more heavily on print.

Finally, these national magazines covered the event in a general manner and paid little attention to specific aspects of the storm and its consequences. Covering the unique issues surrounding this storm is not conducive to the type of approach taken in the weekly news magazines. "Hurricane Alicia Hits Texas" is the title of the *Newsweek* article. The article succeeds in saying little more. The basic facts about the storm are conveyed, yet Hurricane Alicia appears to be no different from any other hurricane.

These national news magazines simply reinforce the observations that we have made concerning the local and national newspaper coverage of this disaster. Considerable attention to looting, crime, massive evacuation, and shelter utilization appears. Once again, given the limited amount of coverage in the national media, these elements assume an even greater salience.

A Brief Observation on the Image of Destruction

A number of disaster researchers have charged that the mass media tend to distort the extent of physical damage, human loss, and social disruption associated with a specific disaster (Quarantelli and Dynes 1972). Generally, it is argued that electronic and print media stories overstate and exaggerate the scope of impact and destructive effects of disaster events. Wenger (1985) has labelled this the "Dresden Syndrome." News film and photographs focus upon scenes of destruction, not upon the surrounding area adjacent to the impact zone. By focusing upon the destruction (i.e., by "shooting bloody"), the audience may be drawn to conclude that a community has been destroyed, rather than a few blocks or a limited area.

As we noted previously, although there was extensive damage to the Houston area caused by the storm, deaths, injuries, and property damage actually represent very small percentages for the area as a whole. To what degree was the relative nature of the destruction conveyed by the media coverage of the event?

Our content analyses support the charge that the media overemphasize destruction and devastation. Destruction appears to be a common theme in the local and national coverage. The reports of destruction appear in pictures, as well as words. Within the local coverage, 13 photographs were run on August 19 alone; three were in color. All of the pictures showed scenes of devastation. Smashed homes, uprooted trees, crushed boats, flooded communities, and toppled businesses leap from the pages. The image of a completely destroyed city persisted through the day.

In addition to the destruction of property and loss of life, local coverage stressed the disruption of normal activities. Because of the massive loss of power and disruption to the telephone system (at one time 750,000 people were without electricity and 300,000 were without phones), normal life seems to come to a halt. Schools, businesses, and concerts were closed or cancelled. The search for ice and batteries seemed to have been the dominant activities for Houston residents (at least given the emphasis upon such stories in these pages).

Within the national coverage, the image of excessive damage also was evident. All three national papers repeatedly gave statistics on the number of people without power or water, as well as dollar estimates of property damage to the city. The national news magazines focused upon damage and destruction. Every one of the nine photographs which appeared were of destruction. The overwhelming image was one of total destruction. The text accompanying the photos did little to contradict this image. Trying to do so would have been a difficult task, because the pictures were so powerful. Wrecked beach homes, uprooted trees, and debris-covered highways and towns left one with the impression that very little was left.

SUMMARY AND CONCLUSION

In this study we have examined the degree to which certain popular disaster myths are disseminated by the local and national print media. Like the previous study by Goltz (1984), we found that the vast majority of news stories do not discuss elements of mythical behavior. However, unlike Goltz, we would argue that these print media accounts did function so as to reinforce and perpetuate disaster myths.

A fundamental issue is raised by this discussion. Specifically, how many references to mythical behaviors are necessary for the media to be viewed as disseminating disaster myths? A quantitative analysis alone cannot answer this question. One front-page story with accompanying pictures and graphics may create a powerful image for the reader that reinforces mythical stereotypes, even if they are not mentioned in thousands of additional column inches. Simply counting references is not sufficient.

Finally, we must note limitations to this study. It is only a case study and additional research should attempt to determine the generality of these findings. In addition, content analyses of the output of the electronic media and motion pictures also should be undertaken. It is possible to argue, in fact, that the dissemination of myths is even more prevalent in these media channels (Quarantelli 1985). Our examination, however, does show that the question of the extent to which the media disseminate myths is still unresearched.

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Within the local press coverage of Hurricane Alicia, there was very little discussion of panic, martial law, or disaster shock. Other major disaster myths, however, frequently appeared. Discussion of mass sheltering and mass evacuation were found in 22 stories. While a number of the articles were clearly anti-mythical or neutral in tone, the image of massive evacuation and shelter utilization was reinforced by a failure of the accounts to place raw, absolute numbers of evacuees and shelter residents within the context of the size of the area population.

The clearest examples of myth dissemination, however, occurred in the local newspaper's stories on criminal behavior and looting. A total of 32 stories referenced these behaviors; 14 of these articles appeared on the front page. Although the subsequent number of arrests and price-gouging incidents were not large, the coverage portrayed an image of strong antisocial behavior. In fact, the essence of this theme may have been captured in a front-page story on August 20. This story noted that looting files in the District Attorney's office had been labeled "Storm Snake." The Assistant District Attorney is quoted as saying, "In a hurricane all the snakes come out. We just want to be able to identify their files."

Similar analysis of the national newspaper and news magazines also indicated elements of mythical behavior. In fact, a majority of the stories made reference to at least one of the myths examined here. Once again, particular attention was given to looting and massive evacuation and shelter utilization. Furthermore, all of the media tended to present a picture of extreme devastation.

Both Goltz and we found that references to mythical behavior occur in a minority of stories. He concludes that the media do not disseminate myths. We conclude the opposite. How can these different conclusions be explained?

Some might argue that Hurricane Alicia was somehow atypical. That looting and criminal behavior were more prevalent in this case than in the "modal" disaster. Therefore, the media were simply mirroring the reality in the social setting. We think not. The actual arrests and disposition of cases do not indicate a major aberration of criminal behavior. Furthermore, compared to normal, non-disaster crime data, the number of repeated incidents is extraordinarily small. This theme, however, did come to be a major factor in the newspapers' coverage of the event.

It is not possible in this investigation to determine how this theme emerged. To do so would require an in-depth organizational analysis of news processing. However, one might surmise that reliance upon traditional sources and popularly accepted definitions of the situation may be factors.

It is more likely that the differences between our conclusions and those of Goltz result from methodological concerns. As was previously noted, it is not clear that the adaptive-maladaptive dimension truly differentiates mythical from non-mythical behavior. As noted, some of the dimensions that we have discussed as myths, e.g., discussion of social control activity, could be viewed as institutional-adaptive behavior. Therefore, it is possible that Goltz underestimates the degree to which behavioral images supportive of disaster myths occur.

Furthermore, we have actually studied different sampling units. The vast majority of the stories that were examined by Goltz were of non-local events. Only 10 of 90 reports in the *Los Angeles Times* and 5 of the 56 in the *Santa Monica Evening Observer* could be interpreted as local coverage; in the case of the latter paper, even its five stories were all from a wire service. Our primary focus has been upon local coverage of a local disaster and coverage by nationally-oriented media of the same disaster, not upon local coverage of non-local events. It may be hypothesized that coverage of mythical elements might be more extensive in local communities due to the more extensive infrastructure and space allocation for copy. Therefore, do the differing conclusions result from studying different situations? Possibly, but we would argue that the primary difference lies elsewhere.

Specifically, we believe that the difference results from the use by Goltz of a purely quantitative methodology. If we had simply counted the number of references to myths, we also might have concluded that they were not a major theme in the coverage. However, one must also examine such qualitative dimensions as the placement of the story, its accompanying photographs and graphics, the amount of space devoted to each reference, and the inherent themes that emerge from the data. Examining these dimensions leads to the conclusion that references to mythical behavior are indeed present and reinforced by newspaper coverage.

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