

IT'S A MATTER OF MYTHS: AN EMPIRICAL EXAMINATION OF INDIVIDUAL INSIGHT INTO DISASTER RESPONSE*

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One of the major contributions of the last twenty years of disaster studies both qualitative and quantitative has been the exposure of widely held stereotypes as untrue, through careful observation and interviewing. We at least know that certain things that both the public and the experienced professionals in the field believed – such as the generality of panic, “shock,” anti-social behavior – are *not* true.

A. Barton (1970: 61)

Disasters have always been the basic ingredient of human dramas ranging from religious epics and Elizabethan tragedies to newspaper stories and grade-B movies. They capture the imagination and provide a vivid backdrop for speculation on the significance of man. . . Late-show scenes of panic-stricken mobs fleeing animal-like before an advancing threat become the stock footage of our own dreams and nightmares. Newspapers photograph the dazed victims of hurricanes, floods, and earthquakes. Disasters have become a reliable source of tragedy, and human-interest stories.

How accurate are these dramatic accounts of people in emergency situations? Since 1963 the Disaster Research Center at Ohio State University has studied nearly 100 different disasters and reviewed all earlier studies of other researchers. . . We found that most persons held preconceived notions about disaster behavior that were essentially untrue.

E.L. Quarantelli and R. Dynes (1972: 67)

These observations are founded upon the rather extensive literature that focuses upon social behavior during natural disaster situations. Since World War II hundreds of disaster events have been studied by social scientists. These studies have led investigators to note that many common beliefs and perceptions about disaster response and post-impact behavior are not empirically valid. In general the conclusion has been that both the public and officials of emergency-relevant organizations possess beliefs about such disaster behavior as panic, looting, martial law, evacuation, and crime that evidence little insight into actual disaster behavior. In other words, myths about natural disasters are widespread.

It must be noted, however, that these observations are based upon either direct observation of disaster behavior or information obtained from interviews with officials in emergency-relevant organizations. As they relate to actual disaster behavior they appear to be accurate. However, these observations go beyond simply noting what actually occurs during a disaster event. They also present conclusions about the “public’s” beliefs and perceptions about what occurs. To our knowledge, however, there has never been a systematic, empirical study of the disaster beliefs and

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perceptions of individuals drawn from a non-victim population existent within an area that does not experience recurrent disaster. Surveys of disaster victims have been undertaken (for example, see Drabek and Key, 1972; Form and Nosow, 1958; Ikle, 1958; Marks and Fritz, 1954; Moore, 1958; and Taylor et al., 1970). In addition, at least one study has sampled residents from the populations of disaster subculture communities in order to determine their knowledge of appropriate and effective disaster behavior (see Osborn, 1970). However, no survey has been undertaken of a non-victim, non-subculture, population during a non-crisis period; i.e., no study has attempted to ascertain the degree of insight into disaster behavior actually held by "most persons" or the general "public". The results of such a survey will be presented in this paper. In effect we will attempt to determine if the public actually does exhibit the lack of insight and acceptance of myths about disaster response that has been attributed to it by numerous investigators.

As such, our task is fairly simple. We will present the results of an opinion and belief survey undertaken with a random sample of the population of New Castle County, Delaware. Our primary interest is in documenting the degree of insight into disaster behavior held by these individuals. In addition, we will consider briefly a few other issues. First, we will examine the extent and nature of disaster experience held by these randomly selected individuals. In so doing we will determine what percentage of the respondents has had experience with natural disaster, and examine the types of disaster situations involved. Second, the nature of the sources of information about disaster response that is salient to the respondents will be examined. We will determine the degree of saliency to these individuals of such sources of information as the electronic media, newspapers, movies, direct experience, and books. Finally, we shall briefly discuss a preliminary attempt to analyze factors that might differentiate those individuals with high insight

into disaster response from those who espouse various disaster myths.

Let us note what we are *not* doing. We are not presenting data relevant to actual disaster behavior or the degree of occurrence of such phenomena as panic flight, looting, or "disaster shock". We accept and have no reason to doubt the accuracy of those investigators who have examined these behavior patterns. We are concerned, however, with the beliefs and perceptions of a randomly selected sample of respondents about these phenomena.

Let us now turn to a discussion of various "disaster myths". Our discussion will not be exhaustive, but will focus upon some of the more common stereotypes. The discussion will be based primarily upon, though not limited to, the recent treatment of the subject by Quarantelli and Dynes (1972).

DISASTER MYTHS

Panic Flight

Numerous investigators have observed that panic flight (i.e., the competitive mass behavior of individuals involved in fleeing from an imminent threat that results in increasing the danger to themselves and others) is rare in natural disaster situations (for example, see Barton, 1970; Dynes, 1970; Janis, 1951; Quarantelli, 1954 and 1960; Quarantelli and Dynes, 1972; and Wenger and Parr, 1969). Only in unique situations are the conditions necessary for the emergence of competitive norms and the existence of panic flight present in natural disaster. (See Fritz and Williams, 1957, and Turner and Killian, 1972 for a treatment of these conditions.) Popular and journalistic accounts of panic flight often involve a large dose of literary license in reporting orderly evacuation. As Barton notes, "All these authors come to the conclusion that the rate of extreme non-adaptive behavior in disasters is generally very low, even in impacts as intense as the Hiroshima atom bombing" (1970: 146).

It has been offered, however, that “the most widespread myth about disasters is the belief that people will panic in the face of great danger” (Quarantelli and Dynes, 1972: 67). It has been inferred that most individuals espouse this belief due to its perpetuation through the mass media. Popular film portrayals of mass behavior in the face of imminent threat picture “crazed hordes” fleeing from the approach of such varied phenomena as tsunamis, fires, earthquakes, floods, nuclear holocaust, meteors, flying saucers, triffids, Grog, Kronos, and Godzilla. As noted, news accounts often either erroneously report panic flight or may be interpreted by the audience as indicating such behavior. In this study we will examine the degree to which randomly chosen respondents agree that panic flight is a major problem in natural disasters.

Looting Behavior

Looting, the appropriation of private property for private use, has been found to be rare in natural disasters (see Marks and Fritz, 1954, and Quarantelli and Dynes, 1970). Studies from the Disaster Research Center report that there are few verified cases of looting in the field studies of disasters (Wenger and Parr, 1969: 76). Dynes and Quarantelli (1968) have presented an analytical explanation for the small degree of looting in terms of the emergence of communal property norms and norms encouraging altruistic behavior.

However, it has been posed that most people believe that looters pour over a disaster site pillaging the homes and businesses of the victims. Disaster victims themselves have been found to readily accept and report rumors of looting (Quarantelli and Dynes, 1972: 69). Once again, the existence of these stereotypes may be at least partly explained by the dramatic picture of post-impact behavior presented in movie and television versions of fictional disaster. In addition erroneous news accounts often report rumors of looting as

looting, or note that social control provisions to protect against looting have been instituted, without reporting that no looting has occurred. Furthermore, since looting has been so widely publicized in civil disturbances, one might infer that individuals will believe that it is common in other, superficially similar, community emergencies. In this study we will determine the extent to which our respondents believe that looting is rare in natural disasters,

Martial Law

As Quarantelli and Dynes note: “Widespread belief notwithstanding, no one has ever declared martial law in a disaster area in the United States. Press reports of martial law inevitably turn out to be entirely false or incorrect descriptions of limited emergency power usually given to local police by mayors or city councils – usually to bar sightseers. In no way do such actions imply or involve cessation of regular civilian authority in the area” (1972: 69). Apparently American values favoring civilian control over the military are very strong and enduring, even in the face of local crises. Once again, however, it is posed that individuals are probably unaware of this fact due to sensational reporting of disaster events, or the simple assumption that martial law must be established in disaster situations to control the non-social behavior of the victims and those who come to exploit their condition.

Post-Impact Crime Rates

Studies from the Disaster Research Center have found that the crime rate of a community usually drops during the emergency period of a disaster (Quarantelli and Dynes, 1972: 69). While one could argue that fewer crimes are committed during the immediate post-impact period as a natural concomitant of the altered social system, it is more likely that the reduced crime rate is a result of altered law enforcement practices that result from changes in the value

priorities of the community. Misdemeanors such as traffic violations, drunkenness, and vandalism are ignored as the local social control agencies turn their attention to other problems, such as handling the massive human convergence that often inundates the disaster site. Normal law enforcement procedures are often altered as the resources and the attention of authorities are focused upon different tasks.

However, it has been posed that individuals hold a general belief that antisocial behavior is widespread in disaster situations. Therefore, it is inferred that they will generally believe that the crime rate normally rises during a disaster.

Evacuation

With respect to evacuation, Quarantelli and Dynes have observed that, "Even when an area is evacuated, the majority of inhabitants do not leave. Those who do flee are primarily transients and tourists — not the people who live there. . . It appears that the major problem in an emergency is getting people to move, rather than preventing wild panic and disorderly flight" (1972: 67–68). Many individuals refuse to evacuate areas until they are forced to do so either by the physical effects of the agent or the legal efforts of local authorities. In communities with disaster subcultures, this problem may be particularly acute as the residents have developed a defiant attitude toward the agent and often remain in their homes to "ride out the crisis" (Wenger and Weller, 1973).

One might expect, however, that members of the public would believe that when warned of an impending disaster, most people are quick to cooperate and evacuate the area. This belief would appear to be related to the opinion that panic flight often occurs prior to impact.

Disaster Shock

One of the most consistent findings of studies of disaster response is that the initial search and rescue activity, casualty care, and

restoration of essential services are accomplished by the victims themselves with the assistance of those in the immediate, filter area. (For example, see Dynes, 1970; Form and Nosow, 1958; and Quarantelli and Dynes, 1972). Barton (1970) notes that the rate of non-adaptative behavior on the part of victims is low, only a few exhibit any shock reaction, and this state is usually short-lived. Actually, the immediate post-impact period is highlighted by intense activity, the emergence of new groups, and adaptative behavior. Empirical evidence does not support the idea that the victims are in a state of shock and unable to care for themselves.

However, Quarantelli and Dynes (1972: 68) state, "The common belief is that shock leaves the victims dazed and disoriented, unable to cope with the immediate task of recovery, dependent on outside help from the Red Cross". Dramatic news and human interest stories often portray the victim as a helpless creature, unable to care for himself and uncomprehending of his condition.

Red Cross

While the Red Cross is an important organization in disaster relief work in the United States and performs invaluable assistance to disaster victims, numerous investigators have noted a paradoxical finding: There is a great deal of resentment and hostility evidenced by disaster victims toward the Red Cross. Form and Nosow (1958), Marks and Fritz (1954), and Moore (1958) have all pointed to the existence of hostility toward the Red Cross. Barton (1970: 297–301) in analyzing the existence of this "anti-Red Cross syndrome" notes that the rationalistic approach of the Red Cross, its tendency to "oversell" its accomplishments, and its procedure of offering compensation on the basis of need versus loss, all work against its symbolic acceptance to the victims and foster resentment. Furthermore, the dual authority structure of the organization, its reliance upon outsiders to supervise local relief operations,

and its imperialistic stance *vis-à-vis* its domain all combine to give the appearance of a cold, bureaucratic, impersonal organization to victims. Quarantelli and Dynes note that the victims often see the organization as unsympathetic and insensitive to local problems and issues (1972: 70).

The Red Cross, however, has traditionally been viewed as *the* disaster relief organization. The message it conveys to the public is that when disaster strikes the Red Cross is not only there, but offers efficient, effective, equal aid to all. In this study we will determine the extent to which our respondents are aware of the resentment and hostility shown by disaster victims to the Red Cross.

Accuracy and News Reports of Disaster

It is evident that a major source of many of the myths about disaster response is the mass media. Quarantelli and Dynes (1972: 70) observe that media accounts are not very accurate with respect to conveying the extent of physical damage, human loss, or social disruption. Initial accounts usually overestimate the number of dead and injured. News films and photographs focus upon the destruction. As a result the audience is given a false impression of the extent of devastation. We have noted that myths of looting, panic, shock, and crime are often spread by the media. As noted by Quarantelli and Dynes (1972: 70), "Reporters have images of what should happen in disaster, and in the absence of contrary evidence they report these images". Part of this issue may be that news reports focus upon the unique events of disaster, but present them as if they were typical.

It would appear obvious that individuals with insight into disaster response would be cognizant of the inaccuracies and bias in news accounts. It is inferred by the investigators that most people believe the media accounts of disaster, however, and that this belief is a major factor in the perpetuation and spread of disaster myths.

Shelter Utilization

A consistent finding in the literature on disaster response is that of those individuals who evacuate their homes, the great majority do not use formally established shelters, but find shelter with friends, relatives, neighbors, or provide for their own lodging. (See Barton, 1970; Dynes, 1970; Quarantelli and Dynes, 1972; and Wenger and Parr, 1969.) Hotels, motels, and private homes provide the bulk of dwellings in the evacuation process. Normally, only about 10 to 30 percent of the evacuees go to formally established shelters.

It is inferred, however, that most individuals are not aware of this shelter pattern. Human interest stories and news photos often show the individuals in formal shelters, not in private homes and motels. Furthermore, the location of formal shelters is often a very salient item in local newspapers. In addition, the Red Cross and Civil Defense are quick to discuss and publicly note their shelter efforts.

Victims' Initial Search for Help

As Quarantelli and Dynes (1972: 68) note: "In general, disaster victims react immediately to their plight. Individuals first seek help from family and friends, then from larger groups such as churches. If these groups are unresponsive or unavailable, victims will look to more impersonal official organizations – the police and welfare departments. Only as a last resort will they turn to the special disaster agencies like the Red Cross or civil-defense organizations."

Form and Nosow (1958) concluded that the initial rescue work is done by individuals who are in the impact area i.e., the victims themselves, and that formal rescue organizations could not be expected to facilitate this task unless they enlist at least the passive cooperation of the population. Furthermore, this helping behavior seems to start with specific persons and moves to aiding others more generally. The usual pattern, however, is for disaster victims to

seek help first from family and friends, and only much later turn to special relief agencies.

It may be assumed, however, that most individuals are not aware of this pattern. Insight into this issue requires a level of knowledge of disaster ecology, search and rescue behavior, and relief agency operation that is fairly sophisticated in nature. Furthermore, the fund-raising campaigns of relief agencies obviously emphasize the important role they play in giving assistance.

Human and Material Convergence

The severe problems caused by the massive convergence of people and materials upon the disaster site have been admirably discussed by Fritz and Mathewson (1957). They (1957: 22–23) state that supplies of food, clothing, and materials: (1) normally arrive in volumes far in excess of actual needs; (2) in large proportion are composed of unneeded and unusable materials; (3) require the services of large numbers of personnel and facilities which could be allocated to more essential tasks and functions; (4) often cause conflict relations among relief agencies or among various segments of the population; (5) materially add to the problem of congestion in and near the disaster area; and (6) in some cases, may be disruptive to the local economy. Barton (1970: 174–180) and Quarantelli and Dynes (1972: 68–69) also note this serious problem. In addition to materials, individuals also converge upon the disaster site. Sightseers, concerned friends and relatives, volunteers, agency personnel, and returning evacuees swarm over the disaster area. Their motivations are heterogeneous; however, their impact is to create problems of congestion and utilization.

This convergence pattern raises the question of effective public aid. What is the most effective aid the non-victim, general public can offer to disaster victims? It would appear that any form of aid which contributes to conver-

gence, such as going in person to the community or sending supplies to the community, would not be as effective as sending money to relief agencies or similar acts.

To what extent are individuals aware of this problem? Due to mass calls for assistance that are often issued by officials at disaster sites, we may infer that most people believe that some form of aid should be given directly to the disaster area.

RESEARCH METHODS

The Setting

This report is based upon information obtained from a random sample of residents of New Castle County, Delaware. New Castle County has a population of approximately 400,000 and contains Delaware's two largest cities, Wilmington and Newark. The boundaries of the county are fairly coterminous with the metropolitan region of Wilmington.

With respect to the racial and socioeconomic characteristics of the population, the county is predominantly white (approximately 85%), however, the city of Wilmington has a large black population. Due in part to the massive research centers of the Du Pont Corporation that are located within its boundaries, the county has a rather high socioeconomic status. The occupational and educational status of the area is high. Its income level is also one of the highest in the nation.

The disaster experience of the area is very limited. There has not been a major disaster in New Castle County in the past decade. The last major natural disaster to strike the area was Hurricane Hazel in 1956. Therefore, without the contamination of recent disaster experience, it would appear to be an excellent area in which to examine disaster myths held by non-victim respondents in a normal, non-disaster setting.

The Technique for Gathering Data

The telephone interview was used in this survey of disaster myths. The use of this technique was dictated because of constraints resulting from costs both in time and money. The authors are aware of the weaknesses inherent in the use of telephone surveys. However, the socioeconomic bias involved in this technique did not appear to have serious consequences for this problem. Furthermore, information was gathered on the education, occupation, and sex of the respondents in order to examine any possible bias. In addition, the universe from which the sample was drawn consisted of a total list of addresses for the county, not the public telephone directory. Finally, the nature of the questions and the primary focus of the study seemed uniquely suited to this technique.

The interviews were conducted by telephone over a two-week period by 39 interviewers. The interviewers were trained in telephone survey techniques and pretested these techniques on a purposive sample before actually conducting the interviews. The authors verified the data by calling back approximately one-sixth of the respondents. Only one discrepancy was discovered, which appears to have been the result of a dialing error. The authors have confidence in the validity and relevance of the data for the problem at hand.

The Interview Schedule

The authors constructed a preliminary interview schedule based upon a list of myths surrounding individual and community disaster response. The previously cited literature provided the bases for this listing. This initial schedule was pretested in telephone interviews using a random sample of 43 respondents.

The final interview schedule included opinion or attitude statements about each of the myths previously noted. Furthermore, it included items that obtained data about the respondent's occupation, education, sex,

disaster experience, and source of information about disasters.

The Sample

The Division of Urban Affairs at the University of Delaware maintains a listing of all addresses in New Castle County. This directory is updated annually for purposes of the division's census of the population. From this universe a random sample of 560 addresses was generated. Telephone numbers were obtained for this sample by consulting a cross-reference directory. This procedure resulted in telephone numbers being available for all but 34 of the addresses. Because of disconnected numbers which were discovered during the interviewing process, the sample size was further reduced. From the final sample of usable numbers, 354 interviews were completed. Of those individuals contacted by the interviewers, approximately 76 percent agreed to cooperate and were interviewed. For purposes of estimation from this sample to the population, the margin of error is 5.2 percent at the 0.05 level of confidence.

FINDINGS AND ANALYSIS

Characteristics of the Sample

Before considering the data related to myths, let us briefly examine the characteristics of the sample in three areas: (1) sex, educational, and occupational distributions, (2) extent and nature of previous disaster experience, and (3) source of information about disasters.

1. Sex, Education, and Occupation

Table I presents the distributions of occupation, education, and sex for the 354 respondents. It is apparent immediately that females are over-represented in the sample. That 66.9 percent of the sample is female is probably a result of using the telephone to gather data. The educa-

tion and occupation dimensions, however, evidence greater diversity. The modal educational category is high school graduate. College graduates and those with graduate or professional training comprise 22.3 percent of the sample. Given the sex distribution of the sample, it is not surprising that private household workers make up the largest occupational category (136 respondents or 38.4 percent of the sample). In sum, the sample included a large percentage of females. The respondents have diverse educational backgrounds and varying occupational positions.

TABLE I

Sex, Education, and Occupation of the Respondents

	Number	Percent
<i>Sex*</i>		
Male	114	32.2
Female	237	66.9
<i>Total</i>	351	99.1
<i>Education</i>		
Grade School	14	4.0
Some High School	50	14.1
High School Graduate	134	37.9
Technical and Trade School	20	5.6
Some College	55	15.5
College Graduate	50	14.1
Graduate or Professional School	29	8.2
Unknown	2	0.6
<i>Total</i>	354	100.0
<i>Occupation</i>		
Professional and Technical	46	13.0
Managers, Officials, Proprietors	13	3.7
Clerical	35	9.9
Sales, Service	36	10.2
Craftsmen (Skilled Workers)	21	5.9
Private Household Workers	136	38.4
Operatives (Semi-skilled Workers)	8	2.3
Farmers, Laborers	7	2.0
Not in the Labor Force	52	14.0
<i>Total</i>	354	100.0

*The sex of three of the respondents could not be determined

2. Extent and Nature of Disaster Experience

The respondents' extent and nature of disaster experience is presented in Table II. Seventy-five of the respondents, or 21.2 percent of the sample, stated that they had personally been in a disaster. However, one cannot assume that these self-reports indicate actual natural disaster experience. Thirty-one respondents claimed to have experienced a hurricane and 20 individuals offered that they had flood experience. A few individuals also claim to have experience with tornadoes or earthquakes. What should be noted, however, is that 12.0 percent of those claiming experience gave unique, idiosyncratic types of stress situations as examples of natural disasters. These did include one typhoon and a tsunami. They also included such "natural disasters" as "war", "our house caught on fire", "my husband had a nervous break-down once", and "having six children". Apparently, the term "natural disaster" has a wide range of referents to members of the public.

TABLE II

The Extent and Nature of Natural Disaster Experience as Noted by the Respondents

	Number	Percent
<i>Extent of Disaster Experience^a</i>		
Experience	75	21.2
No Experience	279	78.8
<i>Total</i>	354	100.0
<i>Nature of Disaster Experience^b</i>		
Tornado	4	5.3
Bomb	3	4.0
Earthquake	2	2.7
Hurricane	31	41.3
Flood	20	26.7
Other	9	12.0
Unknown	6	8.0
<i>Total</i>	75	100.0

^a Respondents were asked, "Have you ever experienced a natural disaster?"

^b Respondents were asked, "What type of disaster was it?"

In sum while 21.2 percent of the sample stated that they had personal experience with natural disaster, only approximately 75 percent of the events could be classified as true natural disasters. Therefore, for over 80 percent of the sample there had been no salient experience with natural disaster. Furthermore, as previously noted, there have been no recent, natural disasters in this area. Therefore, it can be assumed that even for those with natural disaster experience, it is not a recent, salient event.

3. Salience of Sources of Information About Disaster

This assumption seems verified when one examines the sources of information about disaster response that are salient to the respondents. The respondents were asked from what sources they had obtained the greatest amount of information concerning natural disasters. The results are presented in Table III.

Only 6.2 percent of the sample noted direct experience with natural disasters as a salient

source of information. There, while about 20 percent have had experience, it is only salient as a source of information for about one-third of them. For the vast majority of the respondents the electronic media (74.4 percent) and newspapers (63.9 percent) are not only the most salient sources of information about natural disasters, they are the only sources. We have previously noted that Quarantelli and Dynes (1972: 68–70) offer that the mass media are a major source of myths about disaster. For our sample, the exposure to and salience of this content is considerable.

Insight Into Disaster Response

Data pertaining to the respondents' insight into natural disaster response are presented in Tables IV through VII. In general it appears that the degree of insight held by these respondents is generally low; correspondingly, their espousal of disaster myths is high.

Table IV presents the attitudes and beliefs of the respondents with respect to the issues of panic flight, looting, martial law, crime, evacuation, disaster shock, the Red Cross, and news coverage. Lack of insight and espousal of myths are particularly high with respect to panic flight, evacuation, and the victims' view of the Red Cross. Over eight out of ten individuals believe that panic flight is a major problem in disasters, and that when warned, people are willing to cooperate and evacuate the disaster area. Less than 14 percent of the respondents evidenced insight into these patterns.

Only a small minority disagreed with the statement that the Red Cross has come to be regarded by disaster victims in the United States as a very helpful relief agency. Furthermore, the belief in disaster shock appears to be quite prevalent. A large majority of the respondents agreed that immediately following impact the victims are in a state of shock and unable to care for themselves.

With respect to looting and martial law the respondents evidenced only slightly greater in-

TABLE III

Salience to the Respondents of Sources of Information About Disasters^a

	Number	Percent ^b
<i>Source of Information^c</i>		
Electronic Media	260	74.4
Newspapers	236	63.9
Magazines	40	15.3
Motion Pictures	2	0.6
Fiction Books	2	0.6
Non-Fiction Books	14	3.9
Discussion with Others	29	9.2
Direct Experience	22	6.2
Other	20	5.6

^a Number of respondents totals 354

^b Percents total more than 100.0 because respondents were allowed to mention more than one source of information.

^c Respondents were asked, "From what sources have you obtained the greatest amount of information concerning natural disasters?"

TABLE IV

Respondents' Beliefs About Disaster Response*

	Agree		Undecided or No Response		Disagree	
	Number	Percent	Number	Percent	Number	Percent
Panic ^a	296	83.6	22	6.2	36	10.2
Looting ^b	98	27.7	27	7.6	229	64.7
Martial Law ^c	61	17.2	80	22.6	213	60.2
Crime Rate ^d	180	50.8	51	14.4	123	34.7
Evacuation ^e	284	80.2	22	6.2	48	13.6
Disaster Shock ^f	261	73.7	25	7.0	68	19.2
Red Cross ^g	279	78.8	25	7.0	50	14.1
News ^h	193	54.5	35	9.9	126	35.6

* Respondents were asked to agree or disagree with each of the following items.

^a A major problem community officials confront when faced with a natural disaster is controlling the panic of people fleeing from the danger area.

^b Looting rarely occurs after the impact of natural disasters.

^c Martial law has never been instituted in a disaster area in the United States.

^d The Crime Rate of a community usually rises after it has experienced a natural disaster.

^e When warned of an impending disaster, people are willing to cooperate and evacuate the area.

^f Immediately following the impact of a disaster, the disaster victims are in a state of shock and unable to cope with the situation by themselves.

^g The Red Cross has come to be regarded by disaster victims in the United States as a very helpful disaster-relief agency.

^h The news media accurately portray the amount of devastation resulting from a natural disaster.

sight. About two out of three individuals disagreed with the statement that looting rarely occurs after the impact of a natural disaster. Furthermore, about six out of ten respondents believed that martial law must have been instituted somewhere, at sometime in the United States in a natural disaster. What is of particular interest here, however, is that over one-fifth of the respondents were undecided or unable to respond to the question. Martial law is apparently a vague term to many individuals. Although the term is often used in accounts of revolution and civil disturbance, a number of respondents stated that they did not know the exact meaning of martial law or requested clarification about its nature.

In Table IV the greatest insight is evidenced with respect to the crime rate. However, even

in this instance the majority of the respondents espoused the myth that the crime rate usually rises after a community has experienced a natural disaster.

Finally, as one might expect, given the lack of insight shown in the above findings, a majority of the respondents agreed that the news media accurately portray the amount of devastation resulting from a natural disaster. However, a sizeable minority of the sample, 35.6 percent, disagreed.

The respondents evidence greater insight into shelter utilization than any other issue in this study. As noted in Table V, almost one-half of the sample correctly perceived that the majority of the people who evacuate an area go to the homes of friends, relatives, neighbors, or provide for their own shelter. However, approx-

TABLE V

Respondents' Beliefs About Shelter Utilization *

	Number	Percent
Perceive majority go to formal, public shelters	149	42.4
Perceive majority find shelter with friends, relatives, neighbors, or provide for own shelter	173	48.9
Undecided	32	9.0
<i>Total</i>	354	100.0

*Respondents were asked to complete the following statement: "The majority of the people who evacuate an area during a disaster go to: a) formally established public shelters, or b) the homes of friends, relatives, or neighbors or provide for their own shelter."

imately four out of ten individuals espouse the myth that evacuees go to formally established, public shelters.

Beliefs about disaster victims' initial search for help are presented in Table VI. Once again we can observe the rather extensive presence of a myth. Almost one-half of the respondents believe that victims first turn to the Red Cross, Salvation Army, and/or Civil Defense for help. However, about one out of three individuals evidenced insight into the predominant pattern.

TABLE VI

Respondents' Beliefs About Victims' Initial Search for Help*

	Number	Percent
Formal Organizations	168	47.5
Local Organizations	53	15.0
Family and Friends	115	32.5
Undecided or no Response	18	5.0
<i>Total</i>	354	100.0

*Respondents were asked to complete this statement: "The first place disaster victims turn for help is: a) special disaster-relief agencies such as Red Cross, Salvation Army, and Civil Defense, or b) local groups such as churches, welfare agencies, and service organizations, or c) family and friends."

Finally, let us consider what the respondents view as effective disaster aid. The respondents were asked what constituted the most effective aid they could personally offer to disaster

TABLE VII

Respondents' Beliefs About Effective Personal Aid to Disaster Victims*

	Number	Percent
Send Supplies or Money to the Stricken Community	127	35.9
Go in Person to the Community to Help	62	17.5
Send Money to Disaster Relief Organizations	135	38.1
Do Nothing	12	3.4
Undecided	18	5.1
<i>Total</i>	354	100.0

*Respondents were asked to complete this statement: "What is the most effective assistance you as a concerned citizen can offer to the victims of natural disasters? Would you a) send supplies or money to the stricken community, b) go in person to the community to help, c) send money to disaster-relief organizations, or d) do nothing?"

victims. This issue is directly related to the problems of human and material convergence. The results are presented in Table VII. What must be noted is that over one-half of the respondents perceive that the most effective aid they can offer is in a form that will result in direct material or human convergence upon the disaster site! Thirty-six percent of the respondents state that they should send supplies or money directly to the stricken community, while an additional 17.5 percent offer that they would go in person to the community to help. In this instance one can only hope that perceptions and attitudes are not related to behavior! Even though we may assume that most of these individuals will not engage in these forms of "helping" behavior in an actual disaster situation, it is evident that there is a large proportion of the public whose attitudes and beliefs are such as to support the major problems of convergence noted in disasters. Local officials should consider these factors before issuing mass calls for aid.

In sum we note that these respondents do not evidence a high degree of insight into disaster behavior and response. In not a single

case do the majority of the respondents perceive or believe the predominant response pattern. With respect to panic flight, martial law, evacuation, disaster shock, and the victims' views of the Red Cross fewer than two out of ten individuals exhibit insight. Only in the case of shelter utilization do over four out of ten respondents evidence awareness of the predominant pattern.

Factors Related to Disaster Insight

While there was generally low insight evidenced by the respondents, and their beliefs and perceptions were fairly homogeneous, the attempt was made to examine factors that might differentiate those with greater disaster insight from those who espouse disaster myths. It was proposed that the degree of disaster insight evidenced by the respondent might be related to his or her sex, occupation, education, source of information about disaster, and previous disaster experience. It was assumed that greater disaster insight might be positively related to occupation status, years of schooling, and disaster experience. Furthermore, one's source of information and sex, due to sex-linked life style differences, might also be related.

In order to proceed with this analysis, each of the 11 items relating to disaster myths was transformed into a three-point scale evidencing low, moderate, and high insight. Then the 11 items were combined into a "Scale of Disaster Insight". The scale values ranged from 11 to 33, with a higher score indicating greater overall insight. The range of scores was divided into thirds. The general low degree of insight of the respondents is evident when one considers that 30.2 percent of the 354 respondents scored from 11 to 16, 36.4 percent from 17 to 19, and 33.3 percent from 20 to 27. Only seven individuals, or 2.0 percent of the sample, scored over 25. No one scored over 27.

The independent variables of sex, occupation, education, source of information, and

disaster experience were related to the dependent variable of disaster insight by step-wise, multiple regression analysis. The results are presented in Table VIII.

TABLE VIII

Multiple Regression Analysis of Factors Related to Disaster Insight

Dependent Variable: Trichotomized Disaster Insight Scale Variable	r	b	(b) ^a	t
Sex	-0.148	-0.231	0.087	2.56**
Source of Information (1)	-0.135	-0.053	0.020	2.50**
Source of Information (2)	0.126	0.047	0.024	1.96*
Education	0.098	0.041	0.026	1.54
Occupation	0.002	0.020	0.018	1.11
Experience	-0.032	-0.060	0.105	0.56

Multiple R = 0.252

R Square = 0.063

F Ratio = 3.914**

^a Standard error of beta

* Significant at 0.05 level

** Significant at 0.01 level

As one can observe, the results of this analysis are not very satisfactory. While the total regression equation is statistically significant at the 0.01 level, these variables together explain only 6.3 percent of the variance in disaster insight. While sex and source of information are significantly related to insight, the relationships are very weak. Males in the sample tend to be slightly more insightful than females, however, the relationship is only $r = -0.148$. Similar relationships are found for sources of information. Education, occupation, and disaster experience show virtually no association with disaster insight.

We can only guess at an explanation for these weak relationships. The factors that were selected logically would appear to be related to insight. In fact, the authors are not certain what additional factors should be considered. That experience is not related to insight might be surprising. However, Quarantelli and Dynes (1972) have observed that victims are no more insightful than non-victims. Often it is the victims themselves who accept and transmit

various disaster myths. Furthermore, as we noted, the type of experience held by most of these respondents is neither a recent nor salient source of information for them. Overall, however, we might propose that the weak relationships are in part a result of the lack of variation evidenced on the dependent variable. The degree of insight is homogeneously low. Further research into this issue is obviously needed.

SUMMARY AND CONCLUSIONS

These findings definitely support the assumption of Quarantelli and Dynes (1972) and other writers that individuals in the public generally lack insight into disaster behavior. We have examined 11 separate dimensions of disaster response. In not a single case did the majority of these 354 randomly selected individuals exhibit insight into the predominant pattern of behavior. Apparently the myths about disaster are prevalent and widespread, at least within the area in which this sample was drawn.

It is apparent that many of these respondents have either not been exposed to or have not accepted the results of social science investigations of natural disasters. The existence of these stereotypes and the extent of their espousal point to continued practical problems for officials in communities faced with disaster. Many of these individuals expect looting to occur, panic flight to exist, and disaster shock to be present. They also may demand that their local officials take steps to limit or solve these "problems". Furthermore, for the majority of the respondents, their beliefs about aid are likely to contribute to the problems of human and material convergence.

It appears that greater attention must be paid by social scientists to disseminating their findings on disaster response to members of the public if greater insight is to be established. We have previously noted that the mass media not only is a source of many of these beliefs, but is also partly responsible for their continuance. Perhaps the role of the media could be reversed.

Either through more accurate reporting of disaster events, or through documentary treatment, the media might be an important vehicle for increasing public insight. Given the high level of media consumption evidenced in this sample, it would appear to be a fruitful method for at least exposing members of the public to the myths of disaster.

It is hoped that this study not only has contributed to social science research into disaster behavior, but has also raised issues and pointed to areas deserving of further study. We now have data on the degree of insight into disaster response exhibited by a random sample of non-victim individuals residing in a non-disaster, non-subcultural locale. However, the attempt to explain differences in the amount of insight held by the respondents was not very successful. Future research should be focused on replicating this study in other areas. A possible first step might be to examine the insight of individuals in areas that often experience disaster. Furthermore, nationwide sampling might be attempted. Finally, greater attention must be given to selecting and examining those factors that are related to the degree of disaster insight.

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