

University of Delaware
Disaster Research Center

PRELIMINARY PAPER
#164

PUBLIC RESPONSE TO THE
BROWNING PREDICTION:
SOME PRELIMINARY FINDINGS

Margie L. Edwards

1991

Paper presented at the Conference on Public and Media Response to Earthquake Forecasts, Edwardsville, Illinois, May 16-18, 1991.

This paper was undertaken with support from the National Science Foundation, Grant No. BCS-8912287, "Local Earthquake Mitigation and Preparedness Planning in China and the U.S.," E.L. Quarantelli, Principal Investigator. DRC Director Joanne Nigg is responsible for the overall conduct of the U.S. project. The author also wishes to thank Kathleen Tierney, Catherine Simile, and Lisa Ferreira, who provided assistance with the Memphis Survey. The ideas expressed here are those of the author; they do not necessarily reflect the views of the National Science Foundation or the other researchers mentioned here.

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Earthquake prediction efforts in the United States are heavily concentrated in California. Near the community of Parkfield, for example, scientists from the United States Geological Survey (USGS)--the federal agency with primary responsibility for earthquake prediction research in this country-- and other agencies are conducting studies that aim to improve earthquake prediction techniques. As a result of public education efforts by the State and recent earthquake experiences, California residents are generally aware that an earthquake hazard exists.

Unlike California, states in the central region of the nation lack experience with serious earthquakes.¹ Consequently, there is generally little public discussion about the possibility of a serious earthquake or about preparedness and mitigation activities related to the hazard. In communities such as Memphis, Tennessee, where earthquakes are not common events, raising residents' awareness and concern about the hazard is a difficult task for emergency management officials. The low probability of a damaging earthquake in this area in the unspecified future further complicates efforts to increase public concern and preparedness. Recently, however, public attention was drawn to the earthquake hazard by the release of a highly publicized earthquake prediction by Dr. Iben Browning.

Iben Browning, a business consultant and climatologist, issued a controversial earthquake prediction in October of 1989 at a private conference attended by business persons who subscribe to his services. His prediction, made public by the mass media beginning in the early spring of 1990, generated unprecedented attention to the possibility of a major earthquake in the Central United States. Browning predicted a 50% probability of an earthquake of 6.5 to 7.5 magnitude on the Richter Scale occurring in the New Madrid fault area between December 1 and 5, 1990.²

¹ The New Madrid Fault produced more than 2,000 tremors between December 16, 1811 and late March of 1812, with five of the earthquakes registering magnitude 8.0 or greater (Fuller, 1989). While these events are part of the region's collective history, we cannot assume that all people are aware of them, or that awareness of the historically distant earthquakes has an influence on current perceptions of a potential earthquake along the New Madrid Fault.

² The New Madrid Fault runs from Marked Tree, Arkansas to Cairo, Illinois through southeast Missouri.

Although professional seismologists at the USGS estimate the chance of a major earthquake occurring in this area by the year 2000 at 13 to 65% probability, scientific earthquake prediction techniques are not yet sophisticated enough to pinpoint the location, magnitude, and date of earthquakes with the precision that the Browning projection did. Most earthquake experts denounced the prediction and ridiculed Browning, yet the forecast had immediate consequences in the central United States. For example, officials in several Missouri school districts canceled classes during the first week of December. A few charity benefits and other social events scheduled for the period between December 1 and 5 were canceled. One state emergency management agency, in cooperation with the National Guard, organized a disaster drill on December 2 to simulate emergency response after a major earthquake. The Central United States Earthquake Consortium (CUSEC) was overwhelmed with requests for materials and public speakers, resulting in the depletion of their annual budget in just one month.

The prediction also generated a major media event. National and local newspapers and television stations provided a great deal of coverage of the prediction for three months prior to the forecasted date. ABC broadcast The Big One, a made-for-television movie that depicted devastation in California after a major earthquake, perhaps to capitalize on the interest generated by Browning's projection. Interestingly, the movie's plot centered on a prediction made by a female seismologist that no one would take seriously. During the week of the predicted earthquake, media crews descended on the New Madrid region, prepared to provide immediate live coverage of a disaster that never happened.

Concerns about the potential negative economic, social, and political consequences of issuing an earthquake prediction have frequently been raised by scientists and public officials (Kiecolt and Nigg, 1982:132; Mileti et al., 1981:23). Yet a highly publicized prediction such as this one may have favorable implications for individuals and groups at risk from earthquake hazards in the Central United States (cf. Nigg, 1982a). By focusing attention on this region as a potential site of a damaging earthquake, Browning's prediction may have generated discussion about the hazard, contributed to an increased awareness of and concern about earthquakes, and facilitated improvements in household preparedness.

The release of Iben Browning's forecast provided researchers the first opportunity to investigate public responses to a highly publicized prediction for a major, damaging earthquake in the Central United States. Information on individual attitudes and on household preparedness was gathered using a self-completion mail questionnaire distributed to a random, stratified sample of households in Memphis, Tennessee, a city expected to suffer serious damage in the event of a major earthquake along the New Madrid

Fault. The overall purposes of this study were to:

- 1) Examine the level of awareness of, concern about, and faith in the Browning prediction in Memphis, Tennessee.
- 2) Assess the accuracy with which residents of Memphis remembered the details of the Browning prediction.
- 3) Identify the earthquake preparedness and mitigation activities that Memphis residents had engaged in.
- 4) Investigate which sources of information on earthquake prediction and preparedness Memphis residents employed.
- 5) Assess Memphis residents' degree of support for governmental action to reduce the effects of earthquakes on their community.
- 6) Explore Memphis residents' faith in science and technology and trust in scientists.
- 7) Explore Memphis residents' trust in public officials and the mass media.
- 8) Examine Memphis residents' beliefs about the causes of earthquakes and the signs of a coming earthquake.

This paper specifically:

- 1) Assesses the respondents' level of awareness of the Browning prediction and degree of concern about a damaging earthquake occurring in Memphis.
- 2) Examines the frequency, severity, and location of respondents' prior earthquake experiences.
- 3) Identifies which sources of information on household preparedness are most frequently employed by residents of Memphis, Tennessee.
- 4) Provides an overview of the level of household preparedness in Memphis.

In order to understand people's attitudes toward and response to the Browning earthquake prediction, it is necessary to briefly review the literature in two theoretical areas. First, I explore the relationship between attitudes and behavior. This is followed by a discussion of how and why people engage in self-protective behavior, namely hazard reduction activities.

THEORETICAL FRAMEWORKS

Attitudes and Behavior

Attitudes are generally regarded by social psychologists as mental states of readiness (Zimbardo et al., 1977). The attitudinal concept consists of three components (Katz and Stotland, 1959): an affective component, which evokes feelings and emotions used in evaluation; cognition, which consists of beliefs about a category of phenomena (for example, racial stereotypes); and a behavioral component, which refers to the tendency for certain kinds of action. Individual attitudes toward an event tend to be consistent with beliefs about the event (Ajzen and Fishbein, 1980; Rosenberg, 1960). Therefore, changing individual beliefs about the perceived consequences of the event should change individual attitudes. Further, this change in attitudes should facilitate a change in behavior. If attitudes do function as precursors of action (Kahle and Berman, 1979; Kelman, 1974), then it is logical to assume that people's preparedness behavior can be altered by changing their beliefs about the possibility of an earthquake, which should alter their general attitudes toward the attitude-object, earthquake hazard. However, if people instead form attitudes that are consistent with actions they have already taken (Cohen, 1964; Insko, 1968), then efforts at altering attitudes toward environmental hazards have little chance of changing behavior. Current social psychological research shows that while attitudes toward general categories of people or events do not predict specific behaviors (Weigel and Newman, 1976), attitudes do influence an individual's overall response to an attitude-object (Ajzen and Fishbein, 1973;1980).

The fact that attitudes are relatively enduring and fairly stable, although not necessarily permanent (Brannon, 1976), suggests that they are fairly difficult to change. However, attitude change obviously does occur, due to a variety of factors, including experience and education. Direct experience with the attitude object may change a previously held attitude (Fazio, 1977). Field studies show that prior earthquake experience influences, to a limited degree, the purchase of insurance and involvement in other preparedness activities (Kunreuther et al., 1978; Mileti et al., 1975; Turner et al., 1980). The nature and frequency of that experience are important factors influencing the extent of activity an individual engages in (Saarinen, 1982:4).

In addition to experience, education has been shown to elicit attitude and behavior change (Saarinen, 1982). The success of the emergency planning process for disaster events depends largely on potential victims being informed about the nature of the hazard and appropriate responses to it (Regulska, 1982:37). Educational campaigns directed at improving preparedness assume that the learning of new information through persuasive communication efforts will change individual beliefs about a topic. A change in

beliefs is thought to subsequently alter attitudes, which should, theoretically, result in changes in behavior. Persuasive communication, that is, information provided with the intention of altering beliefs, attitudes, and/or behaviors, is composed of four processes: attention, comprehension, acceptance, and retention (Hovland and Weiss, 1951; Hovland et al., 1953). The successfulness of the communication effort is determined by individuals' responses to the four processes.

In sum, increasing an individual's knowledge of preparations that can be taken to reduce damage and injury from earthquakes should encourage the individual to adopt a positive attitude toward preparedness, and consequently, adopt self-protective measures. However, educational efforts in and of themselves do not have direct consequences for increasing the safety of potential disaster victims (Sorensen, 1983). A target population may not interpret or use information in the same way that policy makers intend it to be understood or used, because experts' goals often differ from individuals' goals (Mileti et al., 1981).

Although individual attitudes, prior experience, and extent of education about a hazard are important components of the decision to engage in preparedness and mitigation activities, other factors that enter into the complex decision making process also guide individual action. Tierney (1981) criticizes the assumption that the mere provision of information will lead to the adoption of preparedness measures because this assumption neglects the social context of individual behavior. Social norms, personal goals, individual habits, situational pressures, and economic realities are among the other factors that can constrain or facilitate a change in individual behavior (Tarter, 1970). Moreover, in addition to having knowledge about appropriate behavior, individuals must have the ability to engage in it (Brannon, 1976). Attitude-behavior inconsistency may actually reflect differences in an individual's opportunity and competence to behave in a manner that is consistent with his or her attitude (Erlich, 1969).

Self-Protective Behavior

There is considerable interest among disaster scholars and emergency management officials in facilitating the adoption of appropriate self-protective behaviors (Weinstein, 1987). Despite an extensive body of research that addresses the question of how to improve individual preparedness for natural disasters, programs that attempt to prevent the degree of loss suffered by the victims of a disaster through individual preparedness often meet with limited success (Weinstein, 1987). Public officials in the hazards arena who place the responsibility for safety on individual members of society often become frustrated when individuals fail to take the appropriate actions to protect themselves from the potential damage an event may cause.

Several conclusions have been offered to explain why individuals often fail to engage in preparedness activities. Some behavioral scientists argue that individuals inaccurately perceive the risk associated with hazards in their environment and consequently, fail to take appropriate self-protective action against these hazards (Slovic et al., 1974; Tversky and Kahneman, 1974). Others argue that people in risk situations engage in a process of denial. Although they may be aware of the threat of a natural disaster, most people discount the possibility that they personally will suffer harm from an event, therefore they fail to take precautionary measures (Burton and Kates, 1964; Kunreuther et al., 1978).

Although individual cognitive processes are important in shaping responses to environmental hazards, more attention to the social processes involved in evaluation and decision making is required. A sociological perspective brings the social context of decision-making into the analysis as a central element of the process. Every individual is a member of a social system, and members are connected through communication-- formal and informal; sustained or intermittent; one-way or interactive. The individual's location in the social structure helps determine patterns of information exchange. Collective evaluations of an environmental hazard can help facilitate and sustain individual self-protective behavior by providing social pressure to engage in preparedness activities (Weinstein, 1987).

In explaining the adoption of self-protective measures, Palm (1981) takes into account both individual thought processes and social structural factors, such as economic constraints. She suggests that individuals may fail to take precautionary measures because other factors that enter complex decision making processes, such as financial cost, are more salient than, and therefore outweigh, the risk associated with potential earthquakes. This explanation reflects a rational cost-benefit approach to decision making.

However, an individual's capacity and willingness to perform a cost/benefit analysis of taking a precaution are imbedded in both societal values and personal goals (Mileti and Sorensen, 1987). Without assuming that individuals are completely rational and calculating, we can assume that some form of cost/benefit assessment precedes the adoption of precautions (Hutton and Mileti, 1979; Mileti and Sorensen, 1987; Sorensen and White, 1980). Furthermore, assuming both knowledge and assessment of precautionary measures, the individual's capacity to implement measures also influences the adoption of preparedness and mitigation activities (Mileti and Sorensen, 1987). This capacity is primarily determined by the individual's place in the social structure and the resources s/he has available for such activities (Dynes and Wenger, 1971; Hutton and Mileti, 1979; Mileti, 1975; Sorensen and White, 1980).

Another constraint individuals may face is access to information. There are six important components of communication messages about self-protective behavior. In addition to the content of the message, the quantity, type, frequency, channel, and source of the message are also influential in shaping individual responses to it (Mazur, 1990.; Mileti et al., 1990; Turner et al., 1986). If an individual lacks access to hazard and preparedness information, or if the information is inconsistent or too complicated for the individual to understand, the information may lack utility for its intended users. If the information is not provided repeatedly over time, people often forget receiving it or don't remember the details of the communication (Waterstone, 1978). On the other hand, when people are given repeated access to clear, scientific information about a risk, they are less likely to ignore or misunderstand the hazard and more likely to adopt precautions (Burton and Kates, 1964; Kunreuther, 1978).

METHODOLOGY

This research project was carried out using a mail survey to a random stratified sample of households within the city limits of Memphis, Tennessee. Proportionate numbers of households were drawn from each census tract. Out of a total 279,258 (1990) households located in Memphis, TN, 1158 were randomly selected.³ The data collection strategy is a modified version of Risa Palm's (1990) adaptation of Dillman's (1978) "total design method," a widely adopted strategy in mail research. Each of the 1158 original households chosen to participate in the study were mailed a self-completion survey by first-class mail on October 29, 1990. Participants who had not returned a completed questionnaire by November 11 were sent a second survey by first-class, certified mail on November 14, 1990. Those who had not returned a completed survey by November 20 were contacted by phone (when a phone number was available) between November 22 and November 27. Respondents who still had not returned a survey by January 11, 1991 were sent a third questionnaire by first-class mail on January 14, 1991.

A total of 494 completed surveys were coded in February and March of 1991. The response rate for the project as a whole was 47%. This paper reports preliminary findings based on frequencies and cross-tabulations performed on the total sample, although approximately 11% of the questionnaires were returned after the December 3 prediction date.

³One-hundred sixteen households were dropped from the initial sample because of insufficient address, location outside Memphis city limits, address not a residence, death or incapacity of resident, or non-English speaking residents. This resulted in a sample size of 1042.

Respondent Profile

Memphis has a population of 646,356. Of this number, 52% are White and 48% are Black (Bureau of the Census, 1988). Sixty-seven percent of the survey respondents are White, suggesting that Blacks are somewhat underrepresented as respondents (30%). Other racial-ethnic groups make up slightly more than 2% of the respondents. Males (45%) and females (55%) are relatively equally represented in this sample. The median age of respondents is 45 years. The respondents as a group are more highly educated than the population of Memphis. Sixty-three percent of the city population has a 12 year education, while 15% have a four-year college education (Bureau of the Census, 1988). However, 63% of the respondents have at least some college education, and 33% hold a college or graduate degree. Seventy percent of the respondents are employed either part-time or full-time. The median household income of the respondents is \$30,000. Two person households are the most common for this group (36%). Thirty-six percent of the households in this study contain children under 18 years of age. The majority of respondents (72%) live in single family dwellings. This profile suggests that the results of the survey may be more reflective of White, better-educated residents and cannot be generalized to the population of Memphis.

FINDINGS

The Browning Prediction and Hazard Concerns

Heightened concern and awareness lead to the implementation of protective measures except in cases where concern is unacceptably high (Turner et al., 1986). Virtually every respondent was aware of the prediction made by Browning (99%). Only four respondents reported not having heard about it. Seventy-five percent (N=361) of the respondents expressed a moderate to high degree of concern that they would experience a damaging earthquake in their lifetime (Table 8). Although women were significantly more likely than men to report being concerned about an earthquake in their lifetimes ($\chi^2=16.6$, $p=.001$), this result must be interpreted with caution, since it may reflect men's general reluctance to admit feelings of concern or fear. Blacks were no more likely than Whites to be concerned about a damaging earthquake in their lifetime ($\chi^2=.494$, $p=.05$). Younger Memphis residents, between the ages of 18 and 45, were significantly more likely than those age 46 and older to express concern about a damaging earthquake ($\chi^2=9.02$, $p=.001$). Having some college education or higher is negatively correlated with being concerned. Respondents with a vocational-high school education or less were significantly more likely to be concerned about an earthquake than those with higher levels of education ($\chi^2=8.43$, $p=.005$).

Eighty percent (N=379) of the respondents think that it is "somewhat or very likely" that Memphis will be struck by a damaging earthquake in the next ten years (Table 9). The percentage drops to 54% (N=250) for those who think that Memphis will suffer a damaging earthquake in the next year. The percentage who think that a damaging earthquake is likely to hit Memphis in the next three months is, perhaps surprisingly, still very high (44%, N=206). Considering that 80% (N=250) of the respondents reported that it is unlikely that they will move from Memphis within the next five years, it logically follows that the majority of respondents think that they will be living in an area that is going to suffer from a major earthquake within the next decade. The combination of concern about an earthquake, the perception that a damaging earthquake is likely to occur, and most respondents' intentions of staying in the area should, theoretically, facilitate household preparedness.

Prior Earthquake Experience

Surprisingly, 43% (N=211) of the respondents reported having prior earthquake experience (Table 3). Of the 210, 63.1% (N=123) experienced their most serious earthquake in Tennessee. Sixty-three percent of those with prior earthquake experience were involved in their most severe earthquake between 1971 and 1980. Of those with prior earthquake experience, only 2% were themselves or had household members who were injured, and 7% experienced damage to their homes. Prior experience with a hazard generally contributes to better preparedness, especially when the experiences are multiple and/or severe. The fact that respondents have experienced an earthquake in Tennessee should contribute to their conviction that earthquakes are indeed a threat in Memphis. The frequency, nature, and location of the respondents' prior earthquake experiences are expected to be positively related to preparedness.

Access to Information

"Access to information" variables would include: discussion of earthquakes; number of discussion partners; number and type of preparedness information sources; active information-seeking; attendance at public meetings; and regular newspaper readership. Information seeking and information exchange act as attempts at validation in the assessment of the earthquake threat (Kiecolt and Nigg, 1982). The more discussion partners an individual has and the more informal and formal sources consulted, the greater the salience of the preparedness topic to the respondent (Kiecolt and Nigg, 1982).

Practically all of the respondents had discussed earthquakes with someone in the past year (89%, N=433) (Table 6). Respondents cited friends and neighbors as discussion partners most frequently (76%), followed by discussions with their spouse or partner (68%), and a coworker or boss (67%). When asked about a number of specific preparedness actions that could have been taken, 51% (N=221) of

respondents reported that they made attempts to get information on earthquake preparedness. Twenty-one percent (N=89) of the respondents said they had also attended public meetings in order to get preparedness information.

When asked about the use of specific information channels, 89% (N=429) of respondents reported receiving information on how to prepare for an earthquake from television news (Table 7). Seventy-eight percent (N=375) cited newspaper articles as a source of preparedness information. Forty-nine percent (N=238) of respondents received preparedness information from radio programs. It is not surprising that respondents relied heavily on the mass media for preparedness information. In the United States, there are 1000 television stations, 5000 cable companies, 9000 newspapers with a total circulation of 61 million, and 9000 radio stations (Bagdikian, 1983). The importance of the way in which the mass media present preparedness information is underscored given the respondents' heavy reliance on TV and newspaper sources.

Despite their prevalence, mass media sources do not necessarily have the greatest influence on individual decision-making. Respondents relied on informal sources for preparedness information less frequently than on media sources, but the way in which people respond to each type of source may be qualitatively different. Of the informal sources of preparedness information used by respondents, friends and neighbors were mentioned most frequently (42%), closely followed by family members (39%). The information variables are expected to be positively related to engagement in self-protective behavior. However, individuals may come to either accept or reject the validity of an earthquake prediction through social interaction (Williams, 1964), therefore active information seeking and discussion may serve to reduce anxiety about an earthquake hazard and not lead to household preparation.

Preparedness for an Earthquake

Preparedness entails "almost any predisaster action which is assured to improve the safety or effectiveness of disaster response" (Gillespie and Streeter, 1987:157). Simply stated, preparedness consists of those activities that have the potential to save lives, lessen property damage, and increase control over the subsequent disaster response. Mileti and Sorensen (1987) distinguish between measures that reduce the likelihood of experiencing harm, such as securing heavy furniture or structurally reinforcing the home; and activities "that reduce the cost and anguish of a recovery," (191) such as buying earthquake insurance and storing food and water that provide sustenance temporarily until lifelines can be restored.

Over half of the respondents (N=258) believe that their households are "not very or not at all prepared" for an earthquake

(Table 6). The preparedness measures most frequently engaged in by respondents are: have a working flashlight (84%) and have a battery operated radio (70%) (Table 7). The preparedness activities most prevalent in this community are those usually taken for reasons other than natural hazard safety. While having a working flashlight and battery operated radio on hand and knowing basic first aid (54%) should prove to be helpful in the event of a serious earthquake, few households have taken the necessary action to significantly reduce their potential for injury, death, and damage or to lessen the hardship of recovery. Although 53% of the respondents reported buying earthquake insurance, they may be referring to homeowner's insurance, unaware that this does not cover damages from an earthquake. It is highly unlikely that over half of the respondents actually bought earthquake insurance, although it is more reasonable to believe that 56% of the respondents asked about earthquake insurance given statements from the insurance industry during this period.

DISCUSSION AND CONCLUSIONS

Less than one percent (N=4) of the respondents were not aware of the prediction made by Browning. This may mean that the Browning prediction reached a very large portion of the population in Memphis. It may also suggest that those people who recieved a questionnaire and who were not aware of the Browning prediction were less likely to respond. Given the amount of media coverage devoted to the prediction and the way in which local businesses took advantage of the hype surrounding the New Madrid region (by selling T-shirts and sponsoring earthquake parties), it is not unreasonable to assume that most people were aware of the Browning projection. Even though most seismologists denounced Browning, he may have gained enough credibility through David Stewart's support to be taken seriously by area residents.⁴ In addition, local emergency management agencies may have unintentionally lent credibility to the prediction by using it as an opportunity to increase hazard awareness and preparation.

The release of an earthquake prediction may help facilitate preparedness. Browning's projection offered emergency management agencies an opportunity to place earthquake safety issues on the public agenda. Individual and household preparedness may gradually improve in Memphis over time, especially if local officials continue to stress public education and preparedness and if sufficient resources are allocated for that purpose. Because this survey assessed individuals' attitudes and levels of household

⁴David Stewart was the Director of the Center for Earthquake Studies at Southeast Missouri State University when Browning's prediction was made public. Stewart publicly announced his support of Browning and his faith in the projection. Stewart has since resigned from his position as Director.

preparedness at one point in time, we are not able to determine whether those individuals who chose not to act during the three month period in question altered their responses later. Decision making is not a static phenomenon. In the process of responding to an earthquake prediction, individuals who initially choose not to engage in preparedness and mitigation after gathering information and evaluating the potential risk they are faced with may return to these prior stages at a later time (Nigg, 1982b). In addition, we are unable to determine whether people who did take action will maintain their preparedness levels in the absence of another prediction or actual earthquake.

Even if awareness of the earthquake hazard increases and households choose to adopt recommended self-protective measures in Memphis, the hazard still may not be effectively reduced, since arguably the most effective precautions against earthquakes "are not ones taken by individuals but those legislated or adopted by communities and by nations" (Mileti and Sorensen, 1987:191). This survey focused on hazard reduction measures taken at the household level, but such activities only constitute one element in overall hazard reduction. Individuals are often unable to change hazardous conditions that are established and maintained at the organizational and institutional levels (Clarke, 1988). This helps explain why general social conditions of preparedness do not automatically improve as a result of a large number of people undergoing an attitude change (Tierney, 1981). Other elements include changes in land use and design and construction practices that can only be brought about through organizational and governmental action. As long as preparedness efforts continue to emphasize individual responsibility for safety, and disaster preparedness must compete with other more immediate social concerns, the damage from a future earthquake in the Central United States is likely to be significant.

The results reported in this paper are primarily descriptive. Thus far, only frequency results and basic cross-tabulations have been completed. Only after more complex data analysis has been performed can more useful conclusions be drawn concerning earthquake preparedness in Memphis. Future papers will fully investigate six conditions that influence an individual's likelihood of engaging in hazard reduction activities. These include: 1) prior earthquake experience; 2) awareness of and concern about the earthquake threat; 3) location in the social structure; 4) community attachment; 5) access to information; and 6) level of concern about a future earthquake.

TABLE 1: LEVEL OF CONCERN ABOUT BEING IN A DAMAGING EARTHQUAKE
IN RESPONDENTS' LIFETIME

	Frequency	Percent
Very Concerned	139	29%
Somewhat Concerned	222	46
Not Very Concerned	96	21
Not Concerned At All	<u>25</u>	<u>5</u>
TOTAL	482	101% ¹

¹Total percent does not equal 100% due to rounding.

TABLE 2: RESPONDENT PERCEPTION OF LIKELIHOOD
OF DAMAGING EARTHQUAKE IMPACTING MEMPHIS

	<u>In 10 yrs.</u>	<u>In 1 yr.</u>	<u>In 3 mos.</u>
Very Likely	29%	10%	6%
Somewhat Likely	51	44	39
Not Very Likely	18	39	42
Not Likely At All	<u>3</u>	<u>8</u>	<u>14</u>
TOTAL %	101% ¹	101% ¹	101% ¹
TOTAL N	(476)	(465)	(465)

¹Total percent does not equal 100% due to rounding.

TABLE 3: CHARACTERISTICS OF RESPONDENTS'
PRIOR EARTHQUAKE EXPERIENCES

	Frequency	Percent
Number of Prior EQ Experiences		
One	120	59%
Two or Three	68	34
Four or More	<u>15</u>	<u>8</u>
TOTAL	203	101% ¹
Date of Most Recent EQ Experience		
Pre-1960	14	10
1961-1970	18	12
1971-1980	93	63
1981-1990	<u>23</u>	<u>16</u>
TOTAL	148	101% ¹
Location of Most Serious EQ Experience		
Alaska	6	3%
Arkansas	13	7
California	22	11
Mississippi	2	1
Missouri	15	8
Tennessee	124	63
Utah	1	a
New York	1	a
Ohio	1	a
Indiana	1	a
Idaho	1	a
India	1	a
Japan	5	3
Mexico	<u>3</u>	<u>2</u>
TOTAL	196	101% ¹
Suffered Damage to Property from EQ	15	7%
Family Member or Self Injured from EQ	5	2%

¹Total percent does not equal 100% due to rounding.

^aPercent equals less than 1%.

TABLE 4: INFORMATION SEEKING ACTIONS

	Frequency	Percent
Discussed EQ's in past year	433	89%
Discussed earthquakes with:		
Spouse/partner	290	68
Adult children	153	36
Young children	131	31
Other relatives	262	61
Coworker/boss	258	60
Friend/neighbor	327	76
Clergy	29	7
Someone else	15	4
Tried to get information	221	51%
Attended public meetings	89	21%

TABLE 5: SOURCES OF PREPAREDNESS INFORMATION

	Frequency	Percent
Information Channels:		
Television news	429	89%
Other TV programs	202	42
Radio programs	238	49
Newspaper articles	375	78
Newspaper advertisements	95	20
Magazine articles	131	27
Magazine advertisements	25	5
Books	42	9
Posters	70	15
Brochures	209	43
Films	110	23
Seminars	71	15
Phone book	7	2
Family members	188	39
Friends/neighbors	203	42
Coworkers/boss	142	30
Organizations:		
Church	63	13%
Club meeting	36	8
Town meeting	36	8
Red Cross	100	21
Library	29	6
Utility companies	129	27
Police/fire department	92	19
TEMA	81	17
Memphis State University	145	30
Other source	19	4

TABLE 6: LEVEL OF PERCEIVED PREPAREDNESS OF OWN HOME

	Frequency	Percent
Very Prepared	30	6%
Somewhat Prepared	194	40
Not Very Prepared	192	40
Not At All Prepared	<u>66</u>	<u>14</u>
TOTAL	481	100%

TABLE 7: HAZARD REDUCTION MEASURES TAKEN BY RESPONDENTS

	Frequency	Percent
Action:		
Store food/water	168	37%
Learn first aid	240	54
Have first aid kit	165	37
Devise family plan	135	31
Have working flashlight	394	84
Have battery radio	321	70
Protect glass/dishes	48	11
Secure water heater	40	9
Ask about eq insurance	250	56
Buy eq insurance	233	53
Give children instructions	179	44
Secure furniture	13	3
Have engineer assessment	15	4
Make structural changes	16	4

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