WHO IS HELD RESPONSIBLE WHEN DISASTER STRIKES? THE ATTRIBUTION OF RESPONSIBILITY FOR A NATURAL DISASTER IN AN URBAN ELECTION

KEVIN ARCENEAUX
Temple University

ROBERT M. STEIN
Rice University

ABSTRACT: *When do voters hold politicians accountable for events outside their control? In this article, we take advantage of a rare situation in which a prominent election in a large city followed a devastating flood. We find that voters are willing to punish the incumbent mayor for the flood if they believed the city was responsible for flood preparation. Moreover, we find that the attributions of responsibility for flood preparation are shaped by whether respondents lived in a neighborhood hard hit by the flood and the degree of knowledge they possessed about local, rather than national, politics. We conclude with a discussion of the implications of the psychology of attribution for voting behavior and electoral outcomes.*

Unlike the economy, or even war, it is not obvious that natural disasters are always relevant to citizens' political decisions. It makes intuitive sense that the economy, war deaths, and similar social outcomes are related to voting behavior. These macro political outcomes are arguably direct consequences of government policy, facilitating the attribution of responsibility to the government. It is less clear whether voters should treat natural disasters as a political variable. Natural disasters probably cause more damage to human life and property than even the most severe economic recession, but there are few conditions under which reasonable people can actually believe that the government was responsible for a flood, an earthquake, or a tornado. In this article, we ask a simple but important question: who is held responsible for natural disasters and why?

The psychology of responsibility attribution suggests that voters may be motivated to look for an explanation when catastrophes happen, and government plays a major role in preparing for and responding to natural disasters. Voters may choose to blame

Direct Correspondence to: Robert M. Stein, Dean of Social Sciences, Rice University, 6100 Main St., Houston, TX 77005. E-mail: stein@rice.edu

JOURNAL OF URBAN AFFAIRS, Volume 28, Number 1, pages 43–53.

ISSN: 0735-2166.

government for not doing enough when random disasters strike. Abney and Hill (1966) have offered the only study of the impact of natural disasters on voting behavior to date. They have found that many individuals are willing to blame the government for failing to provide adequate protection against a natural disaster. Although their research probes into the electoral impact of a natural disaster, it remains silent on why some attribute blame but others do not. Understanding this will provide greater insight into the conditions under which policy failure becomes electorally important.

Because the effects of natural disasters tend to be localized, this research is also of considerable significance to the study of urban politics. Although multiple levels of government typically coordinate in preparing for and responding to natural disasters, local governments act as a first line of defense. Understandably, then, citizens expect their local government to be actively involved in disaster preparation (Wolensky and Miller 1981). Indeed, as we will show, when disaster strikes, local government is the focal point of citizens' evaluations, despite the federal nature of the policy definition.

Of course, the reason few researchers have studied the impact of natural disasters on voting behavior is because they are rare events. The massive flooding caused by Tropical Storm Allison in Houston just months before the 2001 mayoral election provided us with a rare opportunity to collect field data on this topic. In addition to studying voting behavior, we also focus on the factors that shape people's willingness to blame the government for the flood. We find that whether citizens blame the government depends on their level of political knowledge and how severely the flood affected their lives. Although many individuals attribute blame to the government, it does not affect their voting decision for mayor unless they blame the city in particular. In the *Conclusion*, we touch on the implications these findings have for the link between institutional design, transparency, and accountability.

NATURAL DISASTERS AND RESPONSIBILITY ATTRIBUTION

There are many reasons citizens may look to the government when blaming for the way in which natural disasters are handled. Psychologically, individuals are often motivated to attribute responsibility for even unpredictable and uncontrollable events to maintain the perception that the world is ultimately predictable and controllable (Lerner 1970; Walster 1966; Wortman 1976). This motivation may especially be present in the context of natural disasters, because they "[highlight] forces (nature) that humans do not control" (Yates 1998, 13). Blaming someone for a disaster helps individuals recapture the feelings of control and a sense that future disasters can be averted. The target of blame is focused on those who can do (or should have done) something to minimize the negative impact of disasters or prevent them altogether (Wortman 1976). Bucher (1957) found that people did not need to believe that the targets of their responsibility attributions were instrumental in causing the disaster to occur, rather it was their ability to prevent it from happening and recurring that mattered most.

Given the scale of natural disasters, people tend to look to government as the responsible party (Bucher 1957; Yates 1998). In contrast to many policies in the United States, disaster preparation and response is widely viewed as the appropriate role of government with most citizens expecting government, especially their local government, to take an active role (Noll 1996; Wolensky and Miller 1981). So, when a natural disaster occurs, citizens may be more inclined to deem the government as a responsible party, because it alone can do something to prevent the extremity of a natural catastrophe.

Aside from psychological motivations, individuals may attribute responsibility to the government for natural disasters, because it is actually involved in preparation for and response to such events. The government supports extensive public warning systems, builds dams, demarcates flood plains, enforces building codes that require property owners to take adequate precautions, and administers a wide array of regulations aimed at reducing the loss of property and life stemming from natural disasters. When natural disasters occur, it is the government that responds with police, fire fighters, emergency personnel, and financial assistance. Consequently, "disasters are an excellent test of government performance" (Schneider 1990a, 172).

TROPICAL STORM ALLISON AND THE 2001 HOUSTON MAYORAL ELECTION

The Houston mayoral election in November 2001 gave us a rare opportunity to explore the link between natural disasters and voting behavior. Because natural disasters are unpredictable, there are very little data to date that link surveys and elections with a natural disaster (Abney and Hill, 1966, provided the only example). The 500-year flood in Houston caused by Tropical Storm Allison occurred just months before the election, providing us with a valuable research setting.[1]

On June 5, 2001, Tropical Storm Allison hit the Southeast Texas coast and dumped rain on Houston and surrounding areas for nearly five straight days. Parts of the city received as much as 37 inches of rain (National Oceanic and Atmospheric Administration 2002). This intense rainfall caused the major bayous of the city to swell and overflow. The drainage system was unable to deal with the massive amounts of continuous rain, which caused severe flooding throughout Houston and the areas that surround it. Flooding was so extensive that much of downtown Houston was under water, and major freeways looked more like rivers than thoroughfares. The 500-year flood caused by Allison led to nearly $5 billion in damage and killed twenty-two people. More than 70,000 homes were flooded. Costumes and sets stored belowground by the Houston Grand Opera as well as 250,000 books stored belowground by the University of Houston Law Library were destroyed (Turner 2002).

National, state, and local agencies all play a significant role in minimizing the impact of natural disasters as well as in responding to them once they occur (Schneider 1990b). Local governments are typically the first layer of disaster preparation and are responsible for implementing the agencies that prepare for and respond to emergencies. Of course, local governments do not do this alone. They receive both federal and state funds, must ensure that agencies responsible for disaster preparation and response meet certain federal and state guidelines, and when local resources are exhausted, the national and state governments step in to help by providing funds and personnel.

Tropical Storm Allison affected not just Houston but the entire county where Houston is located (Harris County). Citizens could potentially blame or credit for the level of flood preparedness at the city, county, state, or national level of government. Allison is also a special case because it occurred just months before the 2001 Houston mayoral election, which proved to be a competitive race between the incumbent Mayor Lee P. Brown and two well-known, at-large city council members. If voters believe the city is responsible for flood preparedness, they should be more likely to weight their view of government performance on the flood in their voting decision for mayor.

DATA AND MEASURES

The University of Houston Center for Public Policy and the Rice University Behavioral Research Lab conducted a survey on the mayoral race for the *Houston Chronicle*.

Interviewing was conducted within three months of Tropical Storm Allison and approximately two months before the election, September 5–26, 2001.[2] There are 792 - completed interviews, randomly drawn from the universe of registered voters in the City of Houston, which created a sample that has ±3.5% margin of error and a response rate of 64%.

We had an opportunity to place a battery of questions on the survey that specifically measured citizens' responsibility attributions regarding flood preparedness in Houston, summarized in Table 1. All respondents were first asked to say whether they believed government policies made their neighborhood "more or less prepared for flooding." Respondents who said "more" are defined as attributing credit to the government, and those who said "less" are defined as attributing blame. Given the flood was undoubtedly seen by the vast majority of Houstonians as a negative event, it may seem puzzling that credit attribution would be an applicable response. Yet it must be remembered that although the flood caused a great deal of damage across Houston, some neighborhoods fared better than others. Moreover, it is possible that some residents may have believed that were it not for the flood prevention measures in place, flooding would have been even worse. Interviewers were also allowed to code the volunteered response, "government policies had no effect" even though that response was not explicitly read to individuals.[3]

Respondents who gave either the "more" or the "less" response were then asked to identify the level of government they credited or blamed for the quality of flood preparation in their neighborhood. Fitting with the functional responsibility question, respondents were allowed to choose national, state, county, city, or something else. The "something else" responses were probed, and answers were recorded verbatim. Respondents who volunteered the "government policies have no effect" response were then asked to clarify whether they meant to say government policies have been doing enough, which is a form of blame attribution, or whether they believed government policies simply did not matter in terms of making their neighborhood more or less prepared for flooding.[4] Those individuals who said that the government was not doing enough were then asked to identify the level of government they blamed for the lack of flood preparation.

TABLE 1
Question Wording for Responsibility Attribution Items, the 2001 Houston Mayoral Survey

Next, I would like you to please tell me whether you think government policies have made your neighborhood more or less prepared for flooding? (The survey allowed respondents to volunteer "government policies had no effect.")
[If respondent chose more or less] What level of government do you think should get the credit or blame for your neighborhood being more or less prepared for flooding: the city, the county, the state, the federal government, or something else?
[If respondent chose no effect] Do you think government has not been doing enough to prepare your neighborhood for flooding or do you think that government policies simply do not matter when it comes to this issue?
[If respondent chose has not been doing enough] What level of government do you think should get the blame for not doing enough to prepare your neighborhood for flooding: the city, the county, the state, the federal government, or something else?

Responses to the initial question were almost split evenly, with 28% saying government policies made their neighborhood more prepared for flooding, 31% saying they made it less prepared, and 24% saying they had no effect. Respondents who volunteered the "no effect" response were asked to clarify what they meant, with one-third saying that government policies were not doing enough to protect their neighborhood from flooding. The "less" and "not doing enough" responses were combined to constitute a measure of blame attribution. Table 2 summarizes the descriptive breakdown for causal responsibility attribution when all of these items are combined. Combining the credit and blame attributions, we see that most respondents (55%) believed that government flood policy (federal, state, or local) was responsible for how devastating (or not) the flood created by Tropical Storm Allison was to Houston, supporting the supposition that many individuals look to the government when attributing responsibility for natural disasters.

Few respondents attributed causal responsibility for flood preparation to either the national or the state government. Illustrating the prominent role that local government plays in disaster preparation, the county and city government received decidedly more attributions of causal responsibility, with the city government receiving more blame attributions than the county. Consequently, we combine nation and state responses together in the analysis that follows.

EMPIRICAL FINDINGS

Do Voters Hold the Mayor Accountable for Natural Disasters?

Do voters hold the mayor accountable for flood preparedness if they believe the city government is specifically to credit or blame? This expectation will be tested with the following logit regression model:

$$V = F\left(\beta_0 + \beta_1 C^{\mathrm{NL}} + \beta_2 C^{\mathrm{County}} + \beta_3 C^{\mathrm{City}} + \beta_4 B^{\mathrm{NL}} + \beta_5 B^{\mathrm{County}} + \beta_6 B^{\mathrm{City}} + \lambda Z\right) \qquad (1)$$

where V = vote preference for Houston mayor (1 = incumbent Lee Brown and 0 = other);
C^{NL} = attribute credit for flood preparation to national or state level;
C^{County} = attribute credit for flood preparation to county;
C^{City} = attribute credit for flood preparation to city;
B^{NL} = attribute blame for flood preparation to national or state level;
B^{County} = attribute blame for flood preparation to county;
B^{City} = attribute blame for flood preparation to city;
Z = matrix of control variables: partisanship, ideology, age, gender, race, income, and education;
F = cumulative density logit function.

Responsibility attribution was measured by a series of dummy variables that identify the level of government to which respondents attributed either blame or credit. Separate dummy variables were created for credit and blame so that the impact of blame is not constrained to have a symmetrical impact on vote choice as credit. Some scholars have argued that blame carries far more weight in voting behavior than credit (Bloom and Price 1975; Kernell 1977). If our thesis is correct, β_6 should be significantly different from zero and significantly larger than β_3. The coding rules for each of these variables are reported in the Appendix.

TABLE 2
Descriptive Breakdown of Combined Responsibility Attribution Items, the 2001 Houston Mayoral Survey

Response	Credit	Blame	Credit + blame
National	20 (9%)	21 (7%)	41 (5%)
State	7 (3%)	14 (5%)	21 (3%)
County	70 (32%)	63 (20%)	133 (17%)
City	84 (38%)	153 (50%)	237 (30%)
Other	13 (6%)	22 (7%)	35 (4%)
Does not matter	NA	NA	101 (13%)
Do not know/refuse	26 (12%)	36 (11%)	224 (28%)
Total	220 (100%)	309 (100%)	792 (100%)

Although Houston holds nonpartisan elections, the incumbent mayor, Lee Brown, is a known Democrat. The partisanship variable was coded such that a positive coefficient would indicate the Democrats are more likely to vote for the mayor. Also, Lee Brown is an African-American and was competing against a white canditate and a Hispanic candidate, so the race variable was coded such that a positive coefficient indicates that African Americans are more likely to vote for Lee Brown.

The logit estimates of Equation 1 are summarized in Table 3. As expected, respondents who blame the city for inadequate flood preparation are 10% less likely to prefer incumbent Mayor Lee Brown. Those who blame some other level of government are neither more nor less likely to prefer Lee Brown, illustrating the role that federalism may play in structuring the impact of natural disasters on voting decisions. More importantly, it demonstrates that citizens are willing to hold elected officials accountable for natural disasters if they perceive the government could have done more to cushion the blow. At this point in the campaign, among those who had an opinion, Mayor Lee Brown enjoyed nearly a 10-percentage-point lead over his closest rival in the three-man race, and 21.2% blamed the city for poor flood preparation. Had one-third of this sample blamed the city, Mayor Lee Brown's support would have dropped by 11 percentage point, which assuming an equal division of lost votes among his two rivals would have been enough to put him in last place and increase the likelihood of his elimination in the first round of voting.[5]

What Shapes Responsibility Attributions About Flood Preparation?

The preceding analysis makes clear that many individuals are willing to attribute responsibility to the government when disaster strikes, and these attributions affect voting decisions in systematic ways. Yet this begs the question: what shapes the responsibility attributions citizens make? Not all individuals blame the government, much less the city government, for inadequate flood preparation. Using the voting literature as a guide, we investigate two major factors that shape individuals' perceptions: personal experience and understanding of government.

People learn about the severity of problems from their personal experiences (Funk and Garcia-Monet 1997), which affect their attributions of responsibility (Sharp and Joslyn 2001). Tropical Storm Allison affected some neighborhoods more than others. Many woke up to flooded cars and houses, whereas others observed the devastation on their television sets from the comfort of their dry living rooms. As discussed above, individuals who experience catastrophe are motivated to attribute blame out of a desire to maintain a

TABLE 3
The Effect of Causal Responsibility Attribution on Vote Preference for Houston Mayor, the 2001 Houston Mayoral Survey

Variable	B	SE
Credit nonlocal	−0.511	0.703
Blame nonlocal	0.459	0.528
Credit county	0.387	0.403
Blame county	−0.582	0.460
Credit city	0.497	0.377
Blame city	−0.833*	0.368
Partisanship	0.586**	0.169
Ideology	0.506**	0.179
Age	−0.058	0.091
Gender	0.184	0.249
Black	2.634**	0.341
Education	−0.052	0.107
Income	0.136*	0.070
Constant	−1.466	0.630*
Number of observations		469
Π^2		161.73**
Pseudo-R^2		0.27
Percent in modal category		70.7
Percent correctly predicted		80.3
Percent reduction in error		33.0

*$p < 0.05$; **$p < 0.01$.

feeling of control. Thus, citizens who live in neighborhoods hard hit by the storm should be more likely to blame government, any level of government, than those who lived in neighborhoods spared by the flood.

The knowledge individuals have about government shapes their opinions and assessments of government (Zaller 1992). Individuals with high levels of political knowledge know more about how government works, particularly the functions that government carries out, that should affect attributions and responsibility. In Houston, the county, rather than the city, sets flood policies. Citizens who know more about government should be more likely to know this fact and attribute blame or credit to the county for flood preparation.

To measure personal experience, we asked respondents to rate how severely the flood damaged their neighborhood. Although we could have used objective measures, such as property damage, this is an issue on which perception counts. The hypothesis is that those who *believe* they have been harshly affected by a catastrophe should be more likely to attribute blame to the government. We measured political knowledge with a battery of factual questions about politics (see Appendix for question wording). Three of the questions pertained to local government in Houston, whereas four pertained to national politics.

We included items that distinguished respondents' knowledge of local from national politics, because individuals who know more about local politics are more likely to be aware of local issues. Most measures of political knowledge include items that tap respondents' understanding of national politics (e.g., Delli Carpini and Keeter 1993; Mondak 1995; Zaller 1992). Yet people tend to pay less attention to local politics than national politics. So it is plausible that some individuals may be highly knowledgeable about national politics but know little about the structure of their local government.

Including items that specifically tap knowledge of local government remedies this problem and allows us to identify individuals who are well informed about Houston City government.

To test these expectations, we estimated the following multinomial logit model using the survey measures discussed above:

$$RA = F\left(\beta_0 + \beta_1 PK^{\mathrm{L}} + \beta_2 PK^{\mathrm{N}} + \beta_3 ND + \lambda Z\right) \tag{2}$$

where RA = responsibility attribution;
PK^{L} = political knowledge regarding local government;
PK^{N} = political knowledge regarding national government;
ND = perception of neighborhood damage;
Z = matrix of control variables: partisanship, ideology, age, gender, race, income, and education;
F = cumulative density multinomial logit function.

Multinomial logit is used to estimate the coefficients in Equation 2, because the dependent variable is categorical. Because neither the statistical significance nor the direction of the coefficients in multinomial logit models provides much information on the actual impact of the independent variables on the *overall probability* a respondent chooses a particular category on the dependent variable, we conserve space by not reporting the parameter estimates. Using these parameter estimates, we calculate the change in the overall probability a respondent attributes credit or blame to a particular level of government, given changes in the independent variables.[6] These probability changes are reported in Table 4.

The results corroborate our expectations. Houstonians who live in neighborhoods hard hit by the flood are more likely to blame, but not credit, government (city, county, and nonlocal) for inadequate flood preparation. This finding provides support for the social psychological theory that individuals who are affected by catastrophes are more likely to attribute blame to external entities. The data also show that respondents who are knowledgeable about local government are more likely to attribute responsibility to the county for flood preparation. Recall that, in Houston, the county is functionally responsible for flood control policy. Note that knowledge regarding national politics has no effect on responsibility attribution. Had we measured political knowledge in the standard fashion, we would have falsely rejected the hypothesis that political sophistication matters.

CONCLUSION

This article demonstrates that natural disasters can have implications for voting behavior. Even though government cannot be blamed for causing something as horrible as a flood, citizens evaluate government performance, especially their local government, in terms of how it handles the disaster. In the event that voters believe that government could have done more to prevent the level of damage, they are willing to attribute blame and punish incumbents accordingly.

Yet not all citizens attribute blame to the government for natural disasters and not all punish incumbents if they do. The devastating floods caused by Tropical Storm Allison and the subsequent mayoral election in Houston provided us with an excellent research setting. Many interesting findings emerged from the survey data we collected. First, voters

TABLE 4
The Impact of Personal Experience and Political Knowledge on the Attribution of Responsibility

	Severe neighborhood damage versus low neighborhood damage	High local knowledge versus low local knowledge	High national knowledge versus low national knowledge
p(credits nonlocal)	6.7	2.5	−1.8
p(blames nonlocal)	6.1*	−1.0	−1.0
p(credits county)	−3.9	12.5**	1.0
p(blames county)	13.0**	1.7	−1.1
p(credits city)	−3.5	1	2.9
p(blames city)	12.6**	−1.2	−0.2

Note. Data represent the difference in probability that a respondent who lives in a neighborhood with severe damage (high knowledge) attributes responsibility to a particular level of government to that of a respondent who lives in a neighborhood with low damage (low knowledge).
*$p < 0.10$; **$p < 0.05$.

appear to take into account the federal structure of flood policy when attributing responsibility, which has direct implications for voting behavior. Only voters who blamed the city for inadequate flood preparation, rather than some other level of government, were more likely to vote against the incumbent mayor. Second, both personal experience and political sophistication shaped whether and who citizens blamed for the flood. Those who experienced the worst of the flood were more likely to hold government responsible. Individuals highly knowledgeable about local politics—as opposed to national politics—were more likely to correctly attribute responsibility to the county rather than the city.

Identifying the conditions under which citizens are willing to attribute blame to the government helps us understand the electoral implications of policy failure. The incumbent mayor in Houston narrowly won reelection in 2001. Had more Houstonians blamed the city for inadequate flood preparation, Mayor Lee Brown may have lost. Conversely, had more citizens been aware of the county's role in setting flood policy, he may have won by a more convincing margin.

Although this study focuses on a rare event—a natural disaster—it highlights the psychology of responsibility attribution. Many individuals seek to assign blame when things go wrong, even in the event of an uncontrollable catastrophe. Understanding the process that affects whether and who citizens blame for events will ultimately provide deeper insights into voting behavior. From economic recessions to terrorist attacks, responsibility attribution holds the key to when voters hold government accountable.

All democratic governments struggle with accountability, effectively responding to the public's wants and demands through popular elections. Our findings provide some insight into how this process operates at the local level and how it might be enhanced. Preferences for government action are shaped by personal experiences and the ability of the public to direct these preferences to the attention of elected officials at the appropriate level of government. The latter requires knowledge and familiarity about government. Our findings suggest that when voters' awareness of the functional responsibilities of government is unambiguous, they are better able to use elections as a means of holding elected officials accountable for perceived activity or inactivity. The transparency of government functional responsibilities can be enhanced by the way governments are organized. The institutional design of government responsibility may offer us a better understanding of how governments can achieve greater accountability.

ENDNOTES

1 A "500-year flood" does not mean that this level of flooding occurs once every 500 years. Rather, it indicates, in a colloquial way, the probability that the level of water required to cause such a flood event will happen in any given year. A 500-year flood is an extreme event that only has a 0.2% chance (i.e., 1/500) of happening each year in a particular area.

2 We refrained from surveying for approximately one week after the September 11, 2001, attacks on the World Trade Center and Pentagon.

3 We chose not to read the "no effect" option to respondents, because it might have been an easy response that masked nonattitudes.

4 Respondents were asked to clarify the "no effect" response, because it is possible it may be used to describe the opinion that government policies may help prevent flooding, but that more could be done.

5 Assuming an equal distribution of lost votes, Lee Brown's support would have had to drop by at least 11% to put him in third place. Because respondents who blamed the mayor have a 10% probability of supporting the mayor, an increase in their ranks by 12% would have been enough (all things being equal) to bring about an 11-percentage-point drop in support [11/(1–0.10)].

6 Probability changes were calculated using Monte Carlo simulation with the help of CLARIFY (King, Tomz, and Wittenberg 2000). The full list of parameter estimates from which these probability changes were calculated is available on request. The substantive significance of these probability changes is also assessed using the simulated confidence interval generated by CLARIFY. Those probability differences that were statistically significant (i.e., the confidence interval did not cross zero) are summarized in Table 4.

APPENDIX

***Neighborhood damage*:** "How badly was your neighborhood damaged by Tropical Storm Allison?" (1 = not at all, 2 = only a little, 3 = somewhat badly, and 4 = very badly).

***Local political knowledge*:** "We have a few questions concerning your knowledge about government. Most people aren't sure of the correct answer, but we're interested in their best guess. If you aren't sure of the answer, please make a guess." (1 = correct and 0 = incorrect/do not know)

"City officials in Houston are elected to serve a fixed number of years in office. Could you tell me how many years that is?"

"Could you tell me the name of the person who currently heads Harris County government?"

"Thinking about Houston's city council, do you happen to know how many members serve at large?"

***National political knowledge*:** (1 = correct and 0 = incorrect/do not know).

"Do you happen to know the job or political office Tom Daschle currently holds?"

"Whose responsibility is it to determine if a law is constitutional or not? Is it the president, congress, or the supreme court?"

"How much of a majority is required for the U.S. Senate and House to override a presidential veto?"

"Do you happen to know which party has the most members in the U.S. House of Representatives?"

***Partisanship*:** "Generally speaking, do you think of yourself as a Republican, a Democrat, and Independent, or what?" (−1 = Republican, 0 = Independent, and +1 = Democrat).

***Ideology*:** "Would you describe yourself as a conservative, a moderate, or a liberal?" (−1 = conservative, 0 = moderate, and +1 = liberal).

***Age*:** "In which of the following age categories do you fall?" (1 = under 30, 2 = 30–39, 3 = 40–49, 4 = 50–59, 5 = 60–69, and 6 = 70+).

***Gender*:** Coded by interviewers (0 = female and 1 = male).

***Race*:** "In which one of the following racial or ethnic categories do you consider yourself? White or Anglo, black or African-American, Hispanic or Mexican-American, Asian-American, or something else." (1 = black or African-American and 0 = otherwise).

***Education*:** "What was the highest grade of formal education you completed?" (1 = less than high school, 2 = high school, 3 = trade school, 4 = some college, 5 = college, and 6 = postgraduate)
***Income*:** "I'll read some annual family income categories. Could you please stop me when I get to the category in which your family falls?" (0 = under $15K, 1 = 15K−25K, 2 = 25K−35K, 3 = 35K−50K, 4 = 50K−65K, 5 = 65K−80K, 6 = 80K−100K, and 7 = 100K+).

REFERENCES

Abney, F. Glenn, and Larry B. Hill. 1966. Natural disasters as a political variable: The effect of a hurricane on an urban election. *The American Political Science Review* 60 (4): 974–81.

Bloom, Howard, and Douglas H. Price. 1975. Voter response to short-run economic conditions. *The American Political Science Review* 69 (4): 1240–54.

Bucher, Rue. 1957. Blame and hostility in disaster. *The American Journal of Sociology* 62 (5): 467–75.

Delli Carpini, Michael X., and Scott Keeter. 1993. Measuring political knowledge: Putting first things first. *American Journal of Political Science* 37 (4): 1179–1206.

Funk, Carolyn L., and Patricia A. Garcia-Monet. 1997. The relationship between personal and national concerns in public perceptions about the economy. *Political Research Quarterly* 50 (2): 317–42.

Kernell, Samuel. 1977. Presidential popularity and negative voting: An alternative explanation of the mid-term congressional decline of the President's party. *The American Political Science Review* 71 (1): 44–66.

King, Gary, Michael Tomz, and Jason Wittenberg. 2000. Making the most of statistical analyses: Improving interpretation and presentation. *American Journal of Political Science* 44 (2): 347–61.

Lerner, M. J. 1970. The desire for justice and reaction to victims. In *Altruism and helping behavior*, eds. J. R. Macaulay and L. Berkowitz, 205–79. New York: Academic Press.

Mondak, Jeffery J. 1995. Newspapers and political awareness. *American Journal of Political Science* 39 (2): 513–27.

National Oceanic and Atmospheric Administration. 2002. Tropical storm Allison floods. Retrieved December 1, 2002 from http://www.srh.noaa.gov/hgx/projects/allison01.htm.

Noll, R. G. 1996. The complex politics of catastrophe economics. *Journal of Risk and Uncertainty* 12 (2–3): 141–46.

Schneider, Sandra K. 1990a. Book review: Disaster relief: The politics of intergovernmental relations, by R. M. Stratton. *Publius: The Journal of Federalism* 20 (4): 170–71.

———. 1990b. FEMA, Federalism, Hugo, and Frisco. *Publius: The Journal of Federalism* 20 (3): 117–30.

Sharp, Elaine B., and Mark Joslyn. 2001. Individual and contextual effects on attributions about pornography. *The Journal of Politics* 63 (2): 501–19.

Turner, Allan. 2002. Allison's deadly punch leaves scars a year later. *Houston Chronicle*, A1, June 3.

Walster, E. 1966. Assignment of responsibility for an accident. *Journal of Personality and Social Psychology* 3:73–79.

Wolensky, R. P., and E. J. Miller. 1981. The everyday versus the disaster role of local officials: Citizen and official definitions. *Urban Affairs Review* 16 (4): 483–504.

Wortman, Camille B. 1976. Causal attributions and personal control. In *New directions in attribution research*, vol. 1, eds. John H. Harvey, William Ickes, and Robert Kidd, 23–52. Hillsdale, NJ: Lawrence Erlbaum.

Yates, Suzanne. 1998. Attributions about the causes and consequences of cataclysmic events. *Journal of Personal and Interpersonal Loss* 3:7–24.

Zaller, John. 1992. *The nature and origin of mass public opinion*. Cambridge: Cambridge University Press.