

PLAYING POLITICS IN THE DEVELOPMENT AND PROVISION OF  
DISASTER INFORMATION FOR HISPANICS

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## ABSTRACT

BROOKE FISHER LIU: *Playing Politics in the Development and Provision of Disaster Information for Hispanics* (Under the direction of Patricia Curtin)

This study examines how states and counties communicate disaster information to Hispanics. Through 13 interviews with state emergency management communicators and a national survey of 435 county emergency management directors, the study benchmarks how many channels states and counties employ to communicate Spanish-language disaster information. The study addresses who state emergency management communicators and county emergency management directors believe should be responsible for developing and providing Spanish-language disaster information. Also, the study explores county emergency management directors' perceptions of how capable various nongovernmental and governmental groups are of producing Spanish-language disaster information. Finally, the study explores whether principal-agent theory helps explain the variety of channels states and counties employ to communicate Spanish-language disaster information.

The interviews revealed that most of the state emergency management communicators do not provide Spanish-language disaster information. Communicators that do provide Spanish-language disaster information do so mostly through working with groups (e.g., Catholic Church, American Red Cross, and local government officials) to develop this information. The interviews also revealed that communicators think counties primarily are responsible for developing and providing Spanish-language disaster information.

The survey found that most of the counties communicate Spanish-language disaster information through at least one channel, but counties communicate English-language disaster information through three times more channels. Also, contrary to what state communicators believe, county emergency management directors believe the federal emergency management agency (FEMA) and states primarily are responsible for developing and providing Spanish-language disaster information. County directors also believe FEMA and the states are most capable of developing Spanish-language disaster information. These findings provide evidence that goal conflict (one of the key constructs of principal-agent theory) exists between the states and counties.

Also, the survey found that one of the most important factors that affects the variety of channels county emergency management directors employ to communicate Spanish-language disaster information is how often the directors work with groups such as FEMA, state emergency management agencies, and nongovernmental groups. Like state communicators, county directors work with a diverse set of groups. Thus, no single group emerges as a leader in producing and providing Spanish-language disaster information. Also, there is no clear channel through which states and counties communicate about how best to produce and provide Spanish-language disaster information, providing evidence of information asymmetry (the other key construct of principal-agent theory).

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## **Chapter I: Introduction and Literature Review**

When Hurricane Katrina landed in southern Mississippi in August 2005, thousands of Hispanics did not know the storm was coming until a few hours before Katrina made landfall. There were no Spanish-language media in the area, but the city of Hattiesburg passed out Spanish-language flyers in a few apartment complexes with large Hispanic populations the Sunday before Katrina hit. Away from the city, however, warnings only came word of mouth and too late (Schaper, 2005).

In October 2002, fear permeated the Washington, DC area when two snipers randomly assassinated people. Police Chief Charles Moose made a special plea to Hispanic immigrants who may have witnessed shootings on their way to work to come forward. The day before making this plea, police arrested and deported two Hispanic undocumented workers who stumbled across a police stakeout for the sniper (Clines & Drew, 2003).

During Hurricane Isabel in 2003, North Carolina Governor Mike Easley placed priority on the restoration of power to Spanish-language radio stations. This order was in direct response to the death of at least two Hispanics who were not able to understand English-only crisis warnings during the winter ice storm earlier in the year (Headrick, 2003).

These examples illustrate the importance of effective crisis communication developed for Hispanics. In the first, thousands of Hispanics were unaware of the impending arrival of Hurricane Katrina, the nation's worst natural disaster to date. In the second, police hindered their investigation by sending inconsistent messages to Hispanics. In the third, North

Carolina first failed to communicate properly during a crisis with Hispanics who speak only Spanish, but subsequently improved its crisis communication with these Hispanics.

This dissertation examines how, if at all, state emergency management agencies (SEMAs) and county emergency management directors incorporate Hispanics into their crisis communication before, during, and after disasters. Questions I explore are: Do states and counties develop preparation, response, and recovery materials in Spanish (e.g., brochures, fact sheets, and public service announcements)? If so, what kinds of materials do they develop? How and at what governmental level are these items developed (local level, state level, and/or national level)? And, I examine whether theory can help explain when and how local governments develop crisis communication for Hispanics.

I selected state and county governments as opposed to the national government as my unit of analysis because, under the 1989 Stafford Act and the 2005 Interim Federal Response Plan, state and county governments are charged with the immediate response to large-scale disasters and, even after national assistance arrives, states are responsible for coordinating the inter-governmental response. I chose emergency management agencies because they are the agencies most involved in crisis preparation and response and thus most involved in crisis communication. They also are the agencies that receive funding from the national government to prepare for and respond to crises.

There are several important reasons for researching whether SEMA communicators and county emergency management directors incorporate Hispanics into their crisis communication. First, Hispanics are the quickest growing minority population in the United States. In 2000, 12% of the U.S. population was Hispanic, but by 2010, the government predicts 24% of the U.S. population will be Hispanic (National Association for

Multiethnicity, 2004). Increasingly, states and counties must consider the unique needs of Hispanics during routine and nonroutine events. It is especially important to consider these unique needs during crises given that most Hispanic immigrants are not familiar with the U.S. disaster system and thus may not be aware of the resources governments, nonprofits, and private organizations provide. Yet historically states and counties are unprepared to communicate effectively with Hispanics during disasters (Bolin & Bolton, 1986; Bolin & Stanford, 1999; Peacock & Girard, 1998; Perry & Green, 1982; Perry & Mushkatel, 1986; Yelvington, 1998). Also, a large body of research examines other vulnerable populations such as the elderly, children, and families (e.g., Rosenfeld, Caye, Ayalon, & Lahad, 2005), but very little research examines Hispanics. Thus, my dissertation not only fills a sizeable gap in the literature but also provides a benchmark of how, if at all, SEMA communicators and county emergency management directors incorporate Hispanics into their crisis communication, which is of interest and use for academics and practitioners alike. Further, my dissertation builds on crisis communication theory by applying a political science theory, principal-agent theory, to analyze crisis communication.

I began my studies in this area by conducting semi-structured telephone interviews with SEMA communicators during March and April 2005. The sample for the interviews came from the top 10 states with the quickest growing Hispanic populations and the top 10 states with the largest Hispanic populations according to the Spring 2005 Census figures, for a total of 19 states in the sample (one state, Nevada, falls into both categories). The titles of my interview subjects varied by state, including public information officer, director of communication, and director of public information. In states that had multiple employees charged with public communication, I interviewed the highest ranking employee. I contacted

the top emergency management communication employee from all 19 states up to five times, and obtained 13 completed interviews.

For the second portion of the study, I followed up on the interview data by conducting a survey of county emergency management directors from across the country. I selected counties as the population because all of the SEMA communicators I interviewed emphasized counties are responsible for communicating with special-needs populations, including Hispanics. The survey sample was all of the counties within the top 10 states with the largest Hispanic populations and the top 10 states with the quickest growing Hispanic populations as identified by the latest Census data. The purpose of the survey was to understand whether and how counties develop Spanish-language disaster information as well as document what channels local governments employ to communicate disaster information in English and Spanish. The survey also tested the applicability of principal-agent theory for research on public sector crisis communication.

I chose the term *Hispanics* rather than *Latinos* to denote people who identify themselves with Mexico, Central American, and/or Latin America and/or speak Spanish. As Green (1995) explains, there are limitations to both terms. The term *Hispanic* was created by the U.S. government's Office of Management and Budget (OMB) in 1978 for census takers who needed a term for whites and others who claimed some degree of Spanish-language or cultural affiliation. In 1997, the OMB decided that *Hispanic* and *Latino* are interchangeable, and in 2003 the U.S. Census Bureau began treating race and *Hispanic* origin as two separate and distinct variables.

The term *Latino* has the advantage of both linguistic and geographic association, but omits Latin Americans who do not speak Spanish (Green, 1995). The term *Latino* also is culturally

and racially neutral, whereas the term *Hispanic* refers to individuals who can trace their roots back to Spain (Marin & Marin, 1991). Perhaps the best solution to this vernacular dilemma is to employ the term used by those who are being researched (Marin & Marin, 1991). Indeed, many of the studies on disasters and minorities use *Mexican-American* instead of *Latino* or *Hispanic* because the primary subjects for those studies are individuals from Mexico. The primary subjects for my dissertation are government employees. Thus, I selected *Hispanic* because this is the term my research population most frequently uses. Nevertheless, I recognize that race and ethnic labels vary over time and are social constructions rather than reflections of reality (Omi, 1999). Likewise, minority groups differ among themselves and are not homogenous (Perry, 1987).

The remaining portion of this chapter presents the literature on the differences between the public and private sectors and the literature on Hispanics and disasters. The next chapter reviews current crisis communication theories and explains why I took an inductive theory approach to the dissertation. This chapter also discusses why I selected interviews and a survey as the methods for my data collections. The second chapter presents the interview findings. The third chapter discusses the findings from the survey, relating these quantitative findings to the qualitative findings from the interviews. The last chapter discusses the implications of the dissertation research for public relations scholars and public sector emergency managers.

## Literature Review

This section reviews two bodies of literature: (a) literature that differentiates the public and private sector environments, and (b) literature on Hispanics and disasters. It is necessary to

review the public sector literature because the majority of crisis communication research that examines public sector crises often assumes public and private organizations respond similarly to crises. Public and private organizations, however, operate in very different environments, resulting in unique crisis planning and response considerations for each environment.

Although there is a limited amount of research on Hispanics and crises, it is necessary to review this literature to situate my dissertation within this research stream. Also, the review of the literature on Hispanics and crises bolsters the argument that much more research needs to be conducted in this area, especially on public sector planning for the unique crisis communication needs of Hispanics.

#### *Understanding the public sector environment*

Most of the literature on crisis communication focuses on the private rather than the public sector (Fisher & Horsley, 2005; Garnett, 1992; Garnett & Kouzmin, 1997; Graber, 2003; Horsley & Barker, 2002). Although both sectors share some common attributes, to paraphrase public administration scholar Graham T. Allison (2004), they are alike in all unimportant respects. Thus, it is important to understand how the two environments differ to understand how crisis communication practiced in the public sector faces unique opportunities and constraints compared to crisis communication practiced in private sector.

The most basic difference between the public and private sectors is that government agencies are not subject to market pressures or preoccupied with surviving as are business groups (Allison, 2004; Appleby, 1973; Avery, Brucchi, & Keane, 1996; Graber, 2003; Kirschenbaum, 2004). Government agencies do not have to worry as much about competition or generating a profit. Instead, government agencies primarily are concerned with the social



purpose of their work (Avery et al., 1996; Rainey, 2003). On one hand, the lack of market pressure allows government agencies to provide important services that the market may not deem necessary, such as Spanish-language crisis information in a state like North Carolina with a Hispanic population of about 8%. On the other hand, the lack of a free market in government operations may encourage the government to be inefficient with its resources, such as not evaluating crisis communication efforts. The lack of a free market also may impede evaluation efforts provided by market indicators such as prices and profits (Allison, 2004).

While market pressures predominately do not guide government actions, regulatory control does affect government behavior (Viteritti, 1997). This control imposes more constraints on procedures and spheres of operations, resulting in more external sources of formal influence and greater fragmentation of these sources (Allison, 2004). For example, the national Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 and the Interim Federal Response Plan of 2003 both clearly outline the steps states have to take to secure national support for a crisis or disaster response. These two federal guidelines mandate that before the national government can supply emergency relief, state governors must formally request the president to declare a state of disaster. In turn, the president must receive a recommendation from the Federal Emergency Management Agency (FEMA) before declaring a state of disaster. If the governor does not formally request aid, FEMA will not take action. Likewise, FEMA will not take action unless requested to do so by the president. Thus, the public sector lacks the flexibility for improvisation that exists in the private sector, and formal regulations guide who takes action and how this action is processed.

Another strong element that controls government behavior is politics (Allison, 2004; Appleby, 1973; Bolin & 't Hart, 2003; Falcione & Downs, 1997; Garnett, 1997; Horsley & Barker, 2002). As Appleby (1973) writes, “other institutions, admittedly, are not free from politics, but government is politics” (p. 25). Politics may restrict creativity and innovation because elected officials do not want to appear too far out of the mainstream (Horsley & Barker, 2002). Politics also introduces greater diversity in influences outside of government, such as public interest groups, and a greater need for support from the people (Allison, 2004; Graber, 2003). In fact, crises are often viewed as the ultimate political events, where politicians either become heroes or villains (Bolin & 't Hart, 2003; O'Brien, 1991; Rosenthal & Kouzmin, 1997). For example, scholars note the national government's delayed and uncoordinated response to 1992 Hurricane Andrew in Florida significantly contributed to former President G. H. Bush's failed 1992 re-election campaign (Peacock & Ragsdale, 1998). Conversely, former New York mayor Giuliani's highly acclaimed response to the September 11, 2001 terrorist attacks made him an international hero (Cohen, Eimicke, & Horan, 2002).

Related to politics is the fact that the government is of interest to everyone and thus is obliged to communicate with everyone (Appleby, 1973; Viteretti, 1997). Also, government audiences are more diverse and demanding than corporate audiences (Allison, 2004; Garnett, 1992, 1997; Graber, 2003). As a result, the public has high expectations for government performance and carefully scrutinizes its performance. For example, on any given issue the government is expected to respond to publics from all three levels of government, lobbyists, public interest groups, and citizens from all age groups and socioeconomic classes. All of these publics have different needs and expect the government to respond to these needs.

The media also highly scrutinize the government, resulting in what Wamsley and Schroeder (1996) call the “CNN syndrome” (p. 236) and Garnett (1992) calls “communicating in a fishbowl” (p. 7). The government is never free from 24/7 news coverage, resulting in a tendency to follow the status quo and improvise less (Garnett, 1997; Graber, 2003; Hiebert, 1981; Schneider, 1995). The media, however, also are dependent upon the government as an important source of information (Cutlip, 1981; Graber, 2003; Hiebert, 1981). Under the Freedom of Information Act, the public and the media have the right to know what the government is doing. This transparent environment may contribute to a tendency to maintain the status quo and slow down decision-making (Graber, 2003).

Public sector communicators cannot operate on their own because they are part of a federalist government that is guided by intergovernmental relations. Federalism is “a system of authority constitutionally apportioned between central and regional governments” (O’Toole, 2000, p. 2). This system of federalism decentralizes authority among multiple players resulting in less decision-making autonomy and greater use of formal regulations (Allison, 2004; Graber, 2003).

Key to understanding the United States federalist government is understanding the role of intergovernmental relations, which is “the subject of how our many and varied American governments deal with each other and what their relative, roles, responsibilities, and levels of influence are and should be” (O’Toole, 2000, p. 2). Thus, federalism in the U.S. does not mean the various levels of government operate on their own; rather, these levels are required to interact in order to fulfill their responsibilities. Intergovernmental relations means that within each level of government, numerous individual variations exist. Perhaps the best way to understand the effect of federalism and intergovernmental relations on the U.S.

government is through Godzins' (2000) analogy of the American government as a marble cake in which all three levels (national, state, and local) intertwine and all government action involves multiple players with diverse political beliefs and policy agendas.

In the context of crises, federalism and intergovernmental relations mean that multiple layers of the government as well as multiple agencies must coordinate during the planning, response, and recover phases of disasters. Each state has an emergency management agency that operates independently of FEMA. The national government mainly supplies funding, the state government primarily serves as the grantee of national funds and director of the crisis response, and the county and municipal governments provide ground support in the form of policemen, firemen, and others (Schneider, 1995; Sylves, 1994). The state government must also coordinate with private sector service providers such as energy companies and nonprofit organizations like the American Red Cross. Thus, crisis communication and management in the public sector involves many more players than in the private sector.

Finally, organizational performance and employee characteristics in the public sector differ from those in the private sector. In government, top management more frequently turns over because of the election cycle (Allison, 2004; Garnett, 1997; Graber, 2003). Top management has less authority in the public sector because of federalism and intergovernmental relations (Allison, 2004; Graber, 2003). Government employees also tend to be less committed to their employers than do corporate employees because of the lack of financial incentives, inefficiency, and frequent turnover of management in the government (Allison, 2004; Graber, 2003). Thus, policy development in the public sector may be disjointed and change frequently.

Despite all of these differences between the public and private sectors, the two environments naturally share some common characteristics and goals. During a crisis, both public and private organizations partner to respond more effectively. For example, after 2005 Hurricane Katrina, Progress Energy restored power to the Gulf region, FEMA provided long-term financial assistance, Louisiana and Mississippi provided immediate food and aid, and the American Red Cross provided shelter. For this reason, some scholars advocate that researchers examine the two sectors together rather than as separate groups (McEntire, 2004; Rainey, 2003). Others note researchers need to consider the blurred lines between public and private sector emergency management (McEntire, 2004; Schneider, 2004).

Rainey (2003) suggests a continuum exists rather than a clear dichotomy between the sectors, which ranges from a pure government agency to a private business with various hybrids in between, such as electric utility companies, which are private organizations heavily regulated by the government. The typology considers ownership, sources of funding, and method of control. According to Rainey's typology, a state agency would be purely public. Government-sponsored enterprises like corporations for public broadcasting and government contractors would fall in the middle. And, private enterprises, such as a public relations agency, would be purely private. This dissertation examines state and county emergency management agencies, which are purely public. It is important, however, to recognize that even such purely public groups interact with other quasi-public groups, such as the American Red Cross, and private groups, such as consulting companies, to communicate with the public.

In sum, the public sector environment provides opportunities and constraints that affect how the government communicates. First, the government predominately is not subject to

market pressures, potentially leading to inefficiency. Second, regulatory control severely restricts options available for action at each level of government. Third, politics exert a strong influence over behavior, sometimes restricting creativity and innovation. Fourth, the government operates in a transparent environment, in which all decisions are scrutinized by the media and the public. Fifth, the system of federalism and intergovernmental relations ensures that decisions are made by multiple, diverse groups rather than by a single entity or person, complicating decision making. Finally, organizational performance and employee characteristics are different in the public sector, which influence the development of policy. All of these opportunities and constraints shape the way in which the government communicates during routine times and non-routine times such as crises. Likewise, the way in which the government communicates during crises is affected by its partnerships with other public entities, quasi-public groups, and private groups.

The literature on the public sector environment highlights the fact that scholars must consider the public sector's unique environmental constraints and opportunities when conducting crisis communication research. Likewise, when conducting research on how crisis communication affects specific publics, such as Hispanics, scholars must consider various factors including the public's preferred sources of information and reactions to warning messages. Of course, more is known about the behavior of certain publics, such as children, during disasters. The following section reviews the limited research on how Hispanics react to disasters in the United States.

### *Hispanics and crises*

Very few studies directly discuss how the government prepares for and responds to the unique crisis communication needs of Hispanics, but researchers have explored how Hispanics differ from Anglos in their responses to disasters. Although this focus is somewhat tangential to the topic of this dissertation, understanding how Hispanics differ from Anglos in their responses to disasters provides insight into why and how the government should plan for the unique crisis communication needs of Hispanics.

Most of the research on Hispanics and disasters takes a vulnerability perspective, arguing that Hispanics are more susceptible to adverse results from disasters than members of the majority population (Perry, Lindell, & Green, 1981). In general, this research can be divided into two primary categories: (a) preferred sources of disaster information and the effects of these sources on preparation and response, and (b) preferred sources of aid after disasters. A third, and smaller, set of studies highlights the importance of considering minorities as unique publics during disaster planning. Because most of the research examining Hispanics during disasters also examines blacks, the literature review highlights findings for both of these minority groups. When possible, I distinguish findings unique to Hispanics. Finally, much of the literature on disasters and minorities, unfortunately, displays significant methodological flaws, discussed later. Also, most of the research was conducted over 20 years ago, raising questions whether the same conclusions would be found if the studies were conducted today. Despite these limitations, however, the findings from the research on Hispanics and disasters unequivocally indicate that the government must develop unique crisis communication strategies for Hispanics (and other minorities).

*Preferred information sources for disaster warning and response by ethnicity.*

Research on preferred information sources for disaster warning and response finds several differences among Hispanics, blacks, and Anglos. This body of research analyzes the importance of social networks, mass media, authorities, and community meetings in informing the public about disasters. In a related vein, limited research also examines the likelihood whites, Hispanics, and blacks will believe disaster warnings and act accordingly (e.g., evacuate when mandated to do so by state government).

Several studies conclude Hispanics, and sometimes blacks, are more likely than whites to rely on social networks for disaster information (Blanchard-Boehm, 1997; Perry & Lindell, 1991; Perry, Lindell, & Green, 1982; Perry & Mushkatel, 1986; Turner, Nigg, Paz, & Young, 1980). Findings, however, are somewhat muddled as to whether these social networks are the preferred source of disaster information for Hispanics. For example, during revised earthquake predictions in California, Blanchard-Boehm concluded through interviews that all of her respondents (white, Hispanic, and black) chose TV news as their primary source of information. Hispanics, however, selected radio news and social networks as their secondary sources of information, whereas blacks also selected radio news but did not mention social networks. Whites did not mention radio news or social networks. Conversely, some researchers conclude that radio is the best medium to reach all audiences because all ethnic groups identify it as an effective source of disaster information (Perry, Green, & Mushkatel, 1983).

Through extensive interviews conducted in two communities, Perry and Lindell (1991) determined Mexican-Americans seem to rely on media more for slow-developing threats and social networks for fast-developing threats. Contrary to Blanchard-Boehm's (1997) findings,



Perry and Lindell determined blacks almost always rely on social networks, whereas whites typically do not rely on social networks except during slowly developing threats (Perry & Lindell, 1991). Through surveying victims after three different disasters (train derailment, flood, and nitric acid spill), Perry and Mushkatel (1986) concluded Mexican-Americans are more likely to engage their social networks than are whites or blacks. Both whites and Mexican-Americans, however, are most likely to engage the media and authorities to confirm warnings, whereas blacks are most likely to contact family and friends (Perry & Mushkatel, 1986).

Research on source credibility and disaster information concludes Hispanics also are more likely than whites to identify authorities as credible sources for disaster information (Johnson, 2002; Perry & Lindell, 1991; Turner et al., 1980), but blacks are the most likely to identify authorities as credible sources compared to whites and Hispanics (Perry & Lindell, 1991). Identification of authorities as credible sources, however, may differ by race and type of authority. From a survey of 1,450 residents of Los Angeles County, Turner et al. concluded Mexican-Americans are more trusting of government sources than are blacks and whites, but whites are more trusting of scientific sources than Mexican-Americans and blacks. Also, blacks perceive scientific sources as the least trustworthy. In their study of a train derailment and a flood, however, Perry and Lindell determined that when a threat is unfamiliar, all citizens, regardless of ethnicity, use social networks. Similarly, examining the literature on official warnings and evacuation response, Perry and Green (1982) noted blacks and Mexican-Americans more often cite official warnings as a reason for evacuation than do whites. Also, Johnson found in a survey that explored responses to air pollution information

that blacks and Hispanics were more likely than whites to trust official sources of information.

Other research indicates Hispanics may treat the media as a more reliable source of disaster information than whites and blacks (Blanchard-Boehm, 1997; Perry & Mushkatel, 1986; Perry & Lindell, 1991). For example, Hispanics often cite two media sources for disaster information (TV and radio), whereas whites cite only one source (television); (Blanchard-Boehm, 1997). Hispanics also rely more on the media for disaster information, especially Spanish-language media, than both whites and blacks (Perry & Mushkatel, 1986). Some research, however, notes that, in general, whites rely on mass media as a credible source for disaster information more than Mexican-Americans and blacks (Perry & Lindell, 1991), and blacks rely the least on media compared with Mexican-Americans and whites (Turner et al., 1980).

One possible explanation for the discrepancies in these findings is Hispanics may seek disaster information only from Spanish-language media. Several studies cite a lack of mediated information available in Spanish, indicating that the same information often is not provided in Spanish and English during disasters (Bolton, Liebow, & Olson, 1993; Moore, Daniel, Linnan, Campbell, Benedict, & Meier, 2004; Phillips, 1993). If the media do not provide information in Spanish, then Hispanics naturally are less likely to cite the media as an important source of disaster information. Another possible explanation for the discrepancies is Hispanics treat the media as a more reliable source of disaster information when spokespeople in the media are also Hispanic (Arpan, 2002; Perry & Mushkatel, 1986). Thus, perhaps when mediated information is available in Spanish and/or spokespeople in the media are Hispanic, citizens who identify with Latino culture are more likely to treat this

information as more credible. This conclusion, however, needs to be validated through future research.

A third information source for disaster information preferred by Hispanics and blacks compared to whites is community meetings. Perry and Mushkatel (1986) concluded both blacks and Hispanics rate community meetings as more desirable sources of disaster information compared to whites. This finding makes sense considering other research determined Hispanics and blacks are more likely than whites to use social networks (Blanchard-Boehm, 1997; Perry & Green, 1982; Perry & Lindell, 1991; Perry & Mushkatel, 1986), indicating personal as opposed to mediated contacts are important for Hispanics and blacks. Since a recent trend in disaster research is to examine community preparedness and understanding of potential hazards (Kirschenbaum, 2004; Lindell & Perry, 2004; Tierney, Lindell, & Perry, 2001), more research on community meetings and their role in transmitting disaster information among various ethnic/racial groups may be forthcoming.

Finally, regardless of the source of disaster information, several studies observe Hispanics and blacks are less likely than whites to evacuate prior to disasters (Gladwin & Peacock, 1998; Perry & Green, 1982; Perry et al., 1982, Turner et al., 1980) and less likely than whites to prepare for disasters (Blanchard-Boehm, 1997; Perry et al., 1982; Turner et al., 1980). In a qualitative study of revised earthquake predictions in Southern California, Blanchard-Boehm found Hispanics and blacks were less likely than whites to make structural improvements to their homes as a preparation for future earthquakes. Reasons for not making these structural changes, however, varied between Hispanics and blacks. Hispanics were most likely to say they never got around to the repairs and blacks were most likely to say they could not afford the repairs (Blanchard-Boehm, 1997). Perry et al. concluded through survey research

Mexican-Americans interpreted the same messages as indicating lower levels of personal danger than whites did and did not plan as much for disasters. Also, Mexican-Americans were more skeptical of warning messages than whites were regardless of the source of the message (Perry et al., 1982). This study did not include blacks.

Explanations for these findings that Hispanics and blacks are less likely to evacuate include the following: Hispanics and blacks are more likely to have extended families who live with them, and thus it is harder to mobilize large groups of people and evacuate (Gladwin & Peacock, 1998); Hispanics and blacks are more likely to have elderly heads-of-households who cannot evacuate, resulting in the entire family not evacuating (Gladwin & Peacock, 1998); Hispanics and blacks have fewer financial resources than whites, and thus are less capable of evacuation (Gladwin & Peacock, 1998; Perry & Green, 1982); Hispanics are less likely to follow recommendations from evacuation warnings (Turner et al., 1980); and Hispanics are more skeptical of warning messages (Perry et al., 1982). Another explanation may be that Hispanic and black cultures tend to be more fatalistic than white culture (Green, 1995; Turner et al., 1980). Thus, Hispanics and blacks may believe disasters are unavoidable and consequently may be less likely to respond to warning and evacuation messages. Since the data on preferred information sources by ethnicity produce mixed results, Perry and Nelson (1991) advise sending disaster information, including evacuation recommendations, through multiple channels over time.

In sum, Hispanics, and sometimes blacks, are more likely than whites are to rely on social networks for disaster information. Hispanics also rely on broadcast media and community meetings as important sources of disaster information. Hispanics are more likely than whites are to identify authorities as credible sources for disaster information and to treat the media

as a reliable source. Finally, regardless of the source of disaster information, Hispanics are less likely than whites are to evacuate prior to disasters.

*Sources of aid and recovery outcomes.*

From reviewing the literature, it is clear that sources of disaster-relief aid differ for blacks, Hispanics, and whites. Further, Hispanics and blacks are reluctant to seek aid, and both Hispanics and blacks are more likely than whites are to receive insufficient insurance settlements. When Hispanics do seek aid, they are more likely than whites or blacks to seek it from a church or nonprofit source than from a government source.

Several studies conclude Hispanics are less likely to seek disaster-relief aid than both blacks and whites (Bolin & Stanford, 1998, 1999; Bolton et al., 1993; Yelvington, 1998). One possible explanation for this phenomenon is that Hispanics who do not hold citizenship fear deportation. After the 1987 Whittier Narrows earthquake, many Hispanics did not seek government aid because they were seeking legal immigration status; under the INS amnesty program at that time, applicants could not receive public assistance while in the United States without documentation (Bolton et al., 1993). It took the federal government almost two weeks to waive this requirement (Bolton et al., 1993). After the 1989 Loma Prieta earthquake, many minority survivors did not go to disaster assistance centers for fear of deportation (Bolin & Stanford, 1990). Similarly, after Hurricane Andrew in 1992, many Hispanics did not seek government-provided temporary shelter for fear of deportation (Yelvington, 1998).

Another explanation is that Hispanics do not expect as much from the government as blacks and whites do because they did not receive aid in their home countries during similar disasters. After the 1994 Northridge Earthquake, recent Mexican immigrants were reluctant

to pursue disaster assistance to which they were legally entitled because they were not accustomed to the government giving aid after disasters (Bolin & Stanford, 1999). These immigrants even tried to repay the American Red Cross with FEMA checks for blankets and food items given to them during the early days of recovery (Bolin & Stanford, 1999).

Both Hispanics and blacks are more likely than whites to receive insufficient insurance settlements after disasters (Bolin & Bolton, 1986; Peacock & Girard 1998). In a comparison of the effects of three natural disasters (tornado, flood, and earthquake), Bolin and Bolton concluded possession of insurance was directly related to ethnicity and socioeconomic status. The researchers found that both black and Hispanic disaster survivors tended to be of lower socioeconomic status than white disaster survivors and subsequently blacks and Hispanics were less likely to possess sufficient insurance. Likewise, after conducting more than 400 interviews with white and black survivors of a Texas tornado, Bolin and Klenow (1988) concluded a significantly higher proportion of white elderly had recovered eight months after the tornado compared to black elderly. The researchers determined socio-economic status affected psychological recovery across all races. Also, family size had a positive effect on black elderly recovery, but not on white elderly recovery (Bolin & Klenow, 1988).

In sum, Hispanics are less likely to seek disaster-relief aid than both blacks and whites. Explanations for this findings are: Hispanics are not accustomed to receiving disaster aid and Hispanics fear deportation if they seek disaster aid. Also, both Hispanics and blacks are more likely than whites to receive insufficient insurance settlements after disasters. Researchers do not provide explanations for this finding other than Hispanics and black are more likely to be members of lower socio-economic classes.

*Emergency planning and blacks and Hispanics.*

Unfortunately, minimal empirical research examines emergency planning and minorities. A few researchers report Hispanics are dissatisfied with the lack of Spanish-language information available via the media during disasters (Bolton et al., 1993; Moore et al., 2004) and the lack of bilingual government employees available after disasters (Phillips, 1993). Also, one study found having an emergency plan was positively correlated with evacuation compliance among blacks and whites, but not among Mexican-Americans (Perry & Green, 1982). Many more researchers highlight the results of poor government planning and interactions with Hispanics after disasters (Bolin & Bolton; 1986; Bolton et al., 1993; Bolin & Stanford, 1998, 1999; Philips, 1993; Yelvington, 1998).

The 1989 Loma Prieta earthquake in California serves as a perfect case study of what can go wrong when Hispanics are not considered in emergency planning. After the earthquake, aid information was insufficiently available in Spanish and the government had very few bilingual workers (Philips, 1993). Also, as a result of poor planning, Hispanics became sick from eating the Anglo food provided by disaster relief workers. And many Mexican-Americans refused to go to American Red Cross shelters because they were afraid of damaging aftershocks, which had occurred after the 1985 Mexico City earthquake (Phillips, 1993). Even more disconcerting, many homeless Central American families refused to stay in the tents provided by the American Red Cross, which served as temporary housing units. These tents reminded many of these refugees of the government-supported death camps in their home countries (Bolin & Stanford, 1990).

Unfortunately, the Loma Prieta earthquake is not the only case study in poor emergency management planning for Hispanics' unique needs. After the 1987 Whittier Narrow

earthquake in California, Hispanics reported during interviews that English-language stations offered more useful information than Spanish-language stations (Bolton et al., 1993). As already discussed, many Hispanics did not go to the shelters because of their previous experience with aftershocks from their home countries (Rubin & Palm, 1987). Also after the Whittier Narrow earthquake, many Hispanics did not seek government assistance because, under the then-operating INS amnesty program, they could not receive government assistance (Bolton et al., 1993).

In addition, after the 1989 Loma Prieta earthquake, Hispanic victims charged the American Red Cross with racism and discrimination, and 20 citizen groups filed complaints against FEMA for what they perceived as systematic discrimination against low-income, non-English speaking victims (Bolin & Stanford, 1990). Both the American Red Cross and FEMA denied these charges, and the suit was later dropped. During 1992 Hurricane Andrew, most of the early hurricane-relief information was provided only in English (Yelvington, 1998). After Hurricane Andrew, border patrol officers had to be told not to wear their uniforms while serving food to tent-city occupants, most of whom were Hispanic (Yelvington, 1998).

In sum, limited research has been conducted on emergency planning and Hispanics. Numerous case studies, however, highlight the importance of considering Hispanics separately from the native English-speaking population when planning for effective emergency management responses.



*Limitations of disaster research on Hispanics.*

Although the research on Hispanics and disasters provides several meaningful insights, the research also possesses several severe limitations. Most obviously, there is not a lot of research on this topic. And, the limited research that exists often groups blacks and Hispanics together as minorities. There no doubt are similarities between Hispanics' and blacks' experiences during disasters, but these similarities are most likely due to similar socio-economic status rather than status as an ethnic/racial minority. More research needs to be conducted that specifically examines Hispanics rather than grouping Hispanics with blacks. Although many researchers identify Hispanics by subgroup (e.g., Mexican-Americans), some researchers need to be careful about grouping all Hispanics together as one uniform minority. In addition, researchers need to consider the different legal status of Hispanics in the United States, specifically how illegal status affects how Hispanics respond to crisis communication.

Most of the limited research on disasters and Hispanics was conducted in the early 1980s to late 1990s. During this time frame, many large disasters occurred, most notably Hurricane Andrew, the Whittier Narrow earthquake, and the Loma Prieta earthquake. These disasters provided excellent fodder for this research area, and the findings from these studies may still be valid today. Much, however, has changed in the United States since this time frame, including INS policies, proliferation of Spanish-language media, size of the U.S. Hispanic population, and awareness of the unique needs of Hispanics by emergency managers at all levels of government. Thus, if the same studies were conducted today, they might yield very different findings.

Another limitation is much of the research on Hispanics and disasters is methodologically flawed. Some demographic variables are interconnected, such as socioeconomic status and

ethnicity, but many researchers do not separate these variables in their analyses.

Consequently, effects are difficult to separate in most disaster response studies (Lindell & Perry, 2004). Similarly, it is highly likely that ethnicity exerts influence on disaster behaviors via indirect or interactive effects with other variables, such as socioeconomic status, perceptions of credibility of authorities, and locus of control (Tierney et al., 2001). Also, responses to disasters may vary among ethnic groups depending on the type of disaster (Perry & Lindell, 1991, Rosenfeld et al., 2005), but most researchers group all Hispanics with blacks regardless of the disaster type being studied. To understand better how Hispanics differ from other publics, future research needs to consider multiple variables rather than just race/ethnicity and disaster preparation/response. Future research also needs to research Hispanics as a separate and diverse ethnic group.

Almost all of the research on Hispanics and disasters examines climatological and geophysical hazards (Fothergill, Maestas, & Darlington, 1999). Hurricanes, tornados, floods, and earthquakes are prime case studies for determining how disasters affect Hispanics differently from other publics. Other disasters, such as terrorism, however, also are important to study. Quarantelli notes (1999) future disasters will be diffuse and complex (e.g., computer failures), and researchers and the government alike need to move beyond the study of only climatological and geophysical disasters. Indeed, given the current hyper-awareness of terrorism in the United States, research on how Hispanics view and react to these threats compared to whites may be particularly relevant and informative. As hurricanes Katrina and Rita recently reminded us, however, preparation for terrorism cannot replace preparation for natural disasters. Katrina and Rita also reminded us that disasters continue to disproportionately affect special-needs publics.

Lastly, and most significant for this dissertation, the vast majority of the literature on Hispanics and disasters focuses on post-disaster response rather than the planning and preparation phases of disasters (Tierney, Lindell, & Perry, 2001). Similarly, most studies focus on the victims of disasters rather than on the decision-makers. When I reviewed the literature I did not uncover a single study that focuses on government emergency management planning and response regarding Hispanics. More research needs to be conducted on how Hispanics plan and prepare for disasters and, specifically, on how the government interacts with Hispanic community members to plan and prepare for disasters.

*Summary: What we know and need to know about Hispanics and disasters.*

As evidenced by the numerous limitations to research on disasters and Hispanics, much still needs to be learned about how Hispanics differ from other publics in their behaviors before, during, and after disasters. Researchers conclude sources of disaster information differ for Hispanics, preferred sources of disaster-relief aid differ for Hispanics, and emergency planners do not often consider Hispanics. Within each of these conclusions, however, there is dissent as to how exactly Hispanics differ from other publics, with the exception that researchers clearly have identified unique behaviors of Hispanics related to seeking disaster-relief aid. As discussed, much of the research combines Hispanics with blacks, further hampering clear conclusions about the unique crisis communication needs of Hispanics. The one absolute conclusion is Hispanics *do* differ from blacks and whites. More research is needed to more concretely determine *how* Hispanics differ. Also, very little research investigates how the government plans for and responds to the unique crisis communication needs of Hispanics. Thus, my dissertation will address this second hole in the

literature by providing a baseline of how, if at all, SEMA communicators and county emergency management directors plan for and responding to Hispanics as a public with unique communication needs.

The next chapter reviews crisis communication theories and explains why I took an inductive theory approach to the dissertation. This chapter also outlines how I collected and analyzed the interview and survey data.

## **Chapter II: Research Methods, Research Phase One, and Emergency Theory**

In this chapter, I first explore existing crisis communication theories, noting why none of these theories is appropriate for research on public sector crisis communication developed for Hispanics. Second, I explain the inductive theory approach applied to the first stage of the dissertation: the interviews with SEMA communicators. Third, I discuss the rationale, approach, sampling procedures, and data analysis techniques for the interviews. Fourth, I present and explain how the interview findings support the application of principal-agent theory to the development of the research questions and hypotheses for the survey. Last, I discuss the rationale, approach, sampling procedures, and data analysis techniques for the second phase of the research, the survey.

### Crisis communication theories

Many scholars believe the crisis communication literature largely lacks theoretical grounding, is disjointed, and needs further development (Quarentelli, 1999; McEntire, 2004). Much of it consists of case studies, which often develop models rather than apply theories (e.g., Horsley & Barker, 2002; Marra, 1998). Many of these case studies, however, provide no theoretical foundation at all (e.g., Kauffman, 1997, 2000, 2001; Mason, 2004; Wise, 2003, 2004). Sociology scholar Quarentelli (1999) describes the field of crisis and disaster research as “putting the elephant together, blowing soap bubbles, and having singular insights” in his seminal book on the disaster studies (p. 234). In other words, there is much room for growth in the development of crisis communication theory.

One explanation for why the field lacks theoretical grounding is that the field is highly applied. Researchers note studies typically focus on a specific event rather than on a broader theoretical understanding of the root of responses to disasters (Schneider, 2004; Tierney et al., 2001). Yet, researchers increasingly call for further theoretical development to enhance practice (Cwiak, Cline, & Karlgaard, 2004; McEntire, 2004; Schneider, 2004; Quarantelli, 1999).

Through an extensive review of the literature, I identified three frequently applied theories for crisis communication research: chaos theory, image repair discourse theory, and situational theory of publics.

#### *Chaos theory*

Chaos theory conceptualizes crises as natural events in the normal life cycle of an organization that result from the accumulation of stress or noise in the system (Koehler, Kress, & Miller, 2001). Chaos theory highlights that over time small variances, referred to as the *butterfly effects*, can create major changes in organizational systems that initially cannot be detected or measured because these changes are so minor (Seeger, 2002). Often, these *butterfly effects* result in crises. Chaos theory advocates for a paradigm shift in crisis management by stating all organizations are prone to crises. Thus, rather than training employees how to avoid and mitigate crises, organizations may be better served by teaching employees how to quickly respond and adapt during crises (Sellnow, Seeger, & Ulmer, 2002). Several key terms used by chaos theorists must be reviewed: *route*, *bifurcations*, *attractors*, *scale*, and *fractals*.

According to chaos theory, organizations continue on a single *route* until they reach a certain point where they become highly sensitive to initial conditions and may abruptly change (Koehler et al., 2001). These abrupt changes are referred to as *bifurcations* and are points at which the system rearranges itself into a new underlying order that may come to resemble, or be completely different, from the prior order (Murphy, 1996). Such bifurcation points often signal the onset of a crisis. Because of this trend toward destabilization through bifurcations, predicting final outcomes beyond the short term becomes impossible (Murphy, 1996). However, these unpredictable systems still possess a deep structure, referred to as *attractors*, which are organizational principles, inherent shapes or states of affairs to which a phenomenon will always tend to return to as it evolves (Murphy, 1996). These *attractors* constrain variance and create an underlying order in a chaotic system (Seeger et al., 2003).

Finally, the terms *scale* and *fractal* refer to the link between chaos theory and method. Scale is the difficulty in perceiving patterns in chaos and the importance of viewing the evolutionary history of systems and organizations rather than single points in time (Murphy, 1996). Because chaos theorists believe quantitative measures lack the necessary precision to understand phenomena in complex and chaotic systems, they recommend qualitative inquiry to discover more detailed meaning (Sellnow, Seeger, & Ulmer, 2002). *Fractals* are elaborate self-repeating systems and patterns that are products of bifurcations. These *fractals* are best measured through qualitative measures that account for perspective (Seeger, Sellnow, & Ulmer, 2003).

In sum, chaos theory is valuable for analyzing crises because it emphasizes numerous elements that are common to crises: impact of small variance and unpredictability (Seeger, 2002). Chaos theory, however, provides a general framework for analysis rather than specific

predictions because the theory views systems as too complex and dynamic for precision (Seeger et al., 2003).

Chaos theory is limited by several factors. Perhaps most significantly, the fact that it is so general lessens the theory's ability to provide detailed analyses, especially predictions. Some researchers observe that chaos theory is best paired with other theories to mitigate this weakness (Seeger, 2002). Another significant limitation of the theory is that it focuses on management decisions as sources of chaos. Management skills, however, may not be the answer to why response organizations fail or succeed during crises. Sensitivity to initial conditions and relationships with other organizations may contribute more to a successful response (Kauffman, 1985). Indeed, in the world of public sector management, intergovernmental relationships as well as public-private sector relationships are essential to effective disaster management. Finally, chaos theory may not be applicable to disaster-focused agencies and organizations because these groups are primed for chaos and thus may be able to better adapt to fractals and bifurcations (Priesmeyer & Cole, 1995).

### *Image repair discourse theory*

Benoit (1995) proposes a theory of image repair discourse to understand how organizations can respond during crises. The two basic components of image repair discourse are that an organization is held responsible for an action by a key public and this action is considered offensive. Thus, an organization does not have to be guilty to be considered responsible. Further, the theory is based on two assumptions: Communication is a goal-directed activity, and maintaining a positive reputation is one of the central goals of communication. For Benoit, reputation is both context-specific and stakeholder-specific



(Fishman, 1999). According to image repair discourse, the primary goal of an organization facing a crisis is restoring or protecting its image. Benoit (1995), however, recognizes that this may not be the only or even most important goal for an organization. Thus, the theory is not intended to capture the phases of a crisis but rather just the rhetoric of the response phase.

Benoit (1997) outlines five broad categories of image repair strategies: denial, evasion of responsibility, reduction of offensiveness, corrective action, and mortification (i.e., beg for forgiveness). These strategies may not always work well together (Benoit & Czerwinski, 1997). Within these categories, several tactics can be employed. For example, under denial, an organization may deny that an act occurred, that the firm performed the act, or that the act was harmful to anyone. Alternatively, an organization can shift the blame and argue that another organization or person was actually responsible for the offensive act.

Benoit (1997) emphasizes that when a crisis occurs organizations must be careful to understand the specific nature of the crisis and the audience they need to address before implementing a plan. Also, organizations should avoid making false claims and should admit fault as soon as possible. Although it is possible at times to shift blame, this strategy cannot be viewed as a solution to problems. It is critical to report plans to correct and/or prevent recurrence of the problem so that the response is not viewed as empty rhetoric. Additionally, minimization cannot always be expected to improve a corporation's image. Finally, the power of persuasion is limited and cannot always be expected to restore an organization's image, especially after a large crisis for which an organization is at fault (e.g., the Exxon Valdez spill).

Image repair discourse theory provides a powerful structure for analyzing rhetorical responses to crises. The theory, however, examines only a single component of a crisis rather

than the entire process (Drumheller & Benoit, 2004). The theory, also, only applies to crises in which culpability is a key issue. Some crises may not be as likely to involve culpability, such as some natural disasters. Since the theory focuses only on the rhetoric of response, it will not be useful for this study, which examines the planning and response phases of disasters.

### *Situational theory of publics*

Introduced by James Grunig in 1976, the situational theory of publics hypothesizes that communication behavior can be explained by the extent to which an individual recognizes a problem, the extent to which an individual's behavior is limited by constraints, and the extent to which an individual is involved in a problem (Grunig, 1977). Developed from Dewey and Blumer's concept of an active public that forms when individuals recognize a problem around specific issues produced by organizational behavior (Dozier & Ehling, 1992), the theory assumes that people behave consistently when faced with similar situations. The theory, however, does not assume that a situation alone can predict people's behavior, but rather people's perceptions of a situation best predicts how they will communicate about that situation.

Situational theory proposes three independent variables: problem recognition, constraint recognition, and level of involvement. Problem recognition refers to whether people detect a problem and think about how they can change the situation. Constraint recognition refers to whether people think they can do anything about the problem (Major, 1998). Situational theory states that people seldom seek information about situations that do not involve them.

Yet, people will randomly process information about low-involvement situations, especially if they also recognize the situation as problematic (Grunig, 1989).

The theory categorizes audiences into four opinion publics based upon degrees of problem recognition and constraint recognition: routine-habit behavior, problem-recognition behavior, fatalistic behavior, and constraint behavior. The theory states that whether individuals actively or passively seek information about a problem depends upon to which opinion public the individuals belong. In routine-habit behavior, an individual communicates automatically to receive information that reinforces habitual behavior (Grunig & Stamm, 1979). In constrained-behavior situations, a person communicates actively until he or she realizes that the constraints cannot be changed. Finally, in fatalistic situations people are apathetic and rarely communicate about their situations. The theory states it may be more difficult to encourage passive audiences to become involved than active audiences (Heath & Douglas, 1991). More recent research applying situational theory investigates antecedent factors to involvement (Aldoory, 2001), one of the key independent variables, and identified a shared dimension of involvement (Aldoory & VanDyke, 2004).

Situational theory has several limitations. First, the theory may be best thought of as a frame of reference for viewing multiple situations, but this frame must not be viewed as entirely consistent from situation to situation over time (Atwood & Major, 1991). Thus, the information seeking and processing behaviors of publics may not be consistently predicted by the theory. Also, situational theory can predict attitudes and behaviors adopted by publics but may not predict memory effects (Cameron, 1992). The theory loses predictive validity if publics do not retain learned behaviors from past situations that can be applied to future situations. In addition, a critical missing variable in situational theory is the sources

individuals use when seeking information (Hamilton, 1992). It is important to know if publics prefer the mass media, interpersonal networks, or other sources so that communicators can release messages through the most effective channels to target audiences. Also, the theory does not consider the valence (negative or positive response) of the publics' problem recognition or involvement, which may affect whether information is retained over time (Cameron, 1992; Slater, Chipman, Auld, Keefe, & Kendall, 1992). Finally, the theory does not consider the publics' support for an issue.

#### Inductive theory approach: Finding crisis theory that fits the public sector

A common weakness of the chaos, image repair discourse, and situational theories is that none focuses on the overall management of crisis communication. Chaos theory provides a conceptual approach to managing crises, but the theory is too broad to develop specific research questions and hypotheses. Image repair discourse theory only focuses on one aspect of crisis communication management: the response rhetoric. Situational theory of public focuses on the audience rather than the management side of crisis communication. Further, none of these theories were developed specifically for the public sector, and thus do not incorporate unique government environmental characteristics such as providing for the greater good, federalism, intergovernmental relations, and frequent management turnover. A theory is needed that incorporates all phases of crisis communication management, planning, response, and recovery, as well as the unique environmental characteristics of the public sector. Because no such inclusive theory could be identified, I took an inductive theory approach to the interviews. As defined by Strauss and Corbin (1998), inductive theory is a method for systematically gathering and analyzing data (mostly qualitative) to generate

theory that explains the data. An inductive approach may produce the foundation for a new theory or may lead to the application of an existing theory to explain the data. Based on the interview findings, I took the latter approach of applying an existing political science theory, principal-agent theory, to explain the interview findings from the first phase of the research.

### Interviews

I conducted 13 semi-structured interviews with SEMA communicators. The interview data provided insights into how and why SEMAs communicate disaster information to the public in general, and Hispanics in particular. The interview data also provided additional insights into what kind of theory is needed for research on public sector crisis communication.

In the next section, I first explain the advantages and disadvantages of qualitative research in general and interviews in particular. This explanation illustrates why I began the data collection with semi-structured interviews. Then, I describe the sampling procedure for selecting the interview participants, outline the interview guide, and explain the data analysis procedures. Finally, I summarize the key interview findings, including the data that led to the identification of principal-agent theory as an appropriate theoretical lens for my dissertation.

#### *Qualitative research: Advantages and disadvantages*

There are many reasons for employing qualitative research in general and interviews in particular. Qualitative research is ideal for exploring a topic for which little is known (Denzin & Lincoln, 2003). By yielding detailed descriptions and observations, called “thick description” (Geertz, 1973), qualitative data yield richer findings than much quantitative research. In the case of my topic of study, little is known about crisis communication

developed for Hispanics, making qualitative inquiry ideal as a first research phase. Another attribute of qualitative research is it collects data from the emic perspective (that of the research participants). It is important to obtain the emic perspective so that the conclusions accurately reflect the population being studied rather than the researcher's biases and/or opinions. The emic perspective especially is important for my dissertation given the dearth of academic and applied research on crisis communication and Hispanics.

Further, in qualitative research, the researcher is the instrument (Marshall & Rossman, 1999). This means that the qualitative researcher has more flexibility to adapt to changing situations as data are collected. Conversely, in quantitative research, the instrument is pre-determined before the data are collected and, once determined, there is no flexibility in adapting the instrument to better meet the population or issues being examined. For this study, flexibility was important because I explored an under-researched topic and did not have previous research to help develop the interview questionnaire. Finally, qualitative research is ideal for building new theory or finding an appropriate existing theory (Strauss & Corbin, 1998). Since the review of the literature did not reveal any theories appropriate for my study, I took an inductive theory approach to the interviews.

#### *Interviews: Advantages and disadvantages*

The purpose of interviews is to obtain data from the research subjects' perspectives (Lee, 1999). There are four commonly employed types of interviews: structured, semi-structured, open, and long (Marshall & Rossman, 1999). Structured interviews allow the least amount of flexibility, requiring the researcher to use a pre-determined interview script that cannot be altered during the interview. Semi-structured interviews allow more flexibility by allowing

the researcher to adjust the interview questions based on findings; these interviews, however, maintain some structure by requiring the researcher to develop an interview guide with five to six questions before conducting interviews. Open interviews are completely unstructured. Typically, these interviews begin with the researcher asking one question and from there the researcher lets the interview subject guide the interview. Finally, long interviews are a combination of semi-structured and open interviews. In long interviews, the researcher has a pre-set guide with a few questions, but the research subject also guides the flow of the interview. I selected semi-structured interviews for my dissertation because I wanted to collect data about a specific topic, crisis communication developed for Hispanics, but also wanted to provide the opportunity for my interview subjects to discuss other issues they thought relevant.

Regardless of the type of interview conducted, the key to a successful interview is developing a sound interview guide (McCracken, 1988). The interview guide provides the focus for the interview and ensures that the researcher asks the questions in the same order for each interview. Similarly, the type of questions asked during an interview is critical to obtaining quality data (Lee, 1999; Marshall & Rossman, 1999). All interviews should begin with a few introductory questions that are easy to answer and develop rapport between the interviewer and interviewee (e.g., Tell me how you came to your current position). Also, researchers should probe aggressively to obtain more detailed answers and should not be afraid of using silence to encourage participants to elaborate on their answers (Marshall & Rossman, 1999).

Interviews can be conducted either in-person or over the phone. In-person interviews have several advantages. These interviews are likely to generate a higher response rate and fewer

early terminations because it is harder for people to say “no” to a researcher in person (Shuy, 2000). In-person interviews often collect more rich detail because better rapport can be developed in face-to-face contacts. Also, in-person interviews are conducted in a naturalistic setting, where nonverbal behavior can be observed. (Shuy, 2000). Finally, in-person interviews can discuss more sensitive topics because of the rapport that can be generated (Shuy, 2000). Telephone interviews are more cost and time efficient than in-person interviews. Telephone interviews are especially appropriate when the research population is geographically disperse (Berg, 2001). I conducted the semi-structured interviews over the phone because of the diversity in geographic locations of my interview participants.

A final important consideration for conducting interviews is how many should be conducted. Kvale (1996) recommends conducting about 15 interviews, give or take 10 depending upon the topic. A better indication of how many interviews to conduct is obtaining data saturation (Lindlof & Taylor, 2002). Practical considerations, however, may be the defining factor in how many interviews are conducted including time, finances, and access. I conducted 13 interviews because I had reached data saturation at this point.

*SEMA interviews: Sample, data analysis procedures, and overview of the findings*

I conducted the 13 semi-structured interviews with SEMA communicators in March and April 2005 after obtaining the Institutional Review Board’s (IRB) approval. The sample for these interviews was SEMA employees charged with public communication. I selected these employees because they know the most about whether and how their SEMA is communicating with Hispanics. The interviewees came from the top 10 states with the



quickest-growing Hispanic populations and the top 10 states with the largest Hispanic populations according to the Spring 2005 Census figures, as shown in Table 2.1.

Table 2.1: State Hispanic Populations

Quickest Growing	Largest
North Carolina Arkansas Georgia Tennessee Nevada South Carolina Alabama Kentucky Minnesota Nebraska	California Texas New York Florida Illinois Arizona New Jersey New Mexico Colorado Nevada

The titles of my interview subjects varied by state, including public information officer, director of communication, and director of public information. In states that had multiple employees charged with public communication, I interviewed the highest-ranking employee. I contacted the top emergency management communication employee from the 19 states identified in Table 2.1. The full interview guide is available in Appendix A. The interviews explored the following primary research questions:

RQ1: What role does your agency and state play in crisis communication?

RQ2: How does your agency communicate with the general public before, during, and after disasters?

RQ3: How does your agency communicate with Hispanics before, during, and after disasters?

In addition, I asked two introductory questions to develop rapport: (a) Tell me about your background, and (b) What are the major disasters your state faces in a given year? To analyze the interview data, I followed the procedures Miles and Huberman (1994) recommend, including the use of Atlas.ti to code the data. However, I did not use Atlas.ti for the final analysis.

Miles and Huberman (1994) recommend three concurrent streams for qualitative data analysis: data reduction, data display, and conclusion drawing/verification. Data reduction is the process of abstracting and simplifying data from field notes and transcriptions. A data display summarizes the abstracted data and allows the researcher to draw conclusions. During the third stream, conclusion drawing/verification, the researcher verifies the meanings that emerge from the data through reviewing the data reductions and data displays.

The process of data reduction begins with creating codes, which are “tags or labels for assigning units of measurement to the descriptive or inferential information compiled during the study” (Miles & Huberman, 1994, p. 56). Codes can be attached to words, phrases, sentences, or whole paragraphs and can be descriptive, interpretive, and/or identify patterns. Miles and Huberman recommend creating a provisional start list of codes before beginning field work; these codes come from the literature, conceptual framework, research questions, and/or hypotheses. They also note, however, that researchers may want to take a more inductive theory approach, such as proposed by Strauss and Corbin (1998), by creating codes inductively after reviewing the data. A third approach to creating codes is combining etic categories (the researcher’s coding categories) with emic categories (the participants’ coding categories) by nesting the emic categories within the etic categories. I developed the codes for this dissertation by following the third approach: combining emic and etic categories.

Whatever coding approach is taken, Miles and Huberman recommend creating research memos to document coding decisions, which can be used to examine consistency in coding decisions and to draw conclusions.

When the researcher is ready to synthesize the information from the data reduction stream, Miles and Huberman (1994) recommend creating data displays. These displays are visual and systematic summaries of the data. It is important to note that by creating a data display the researcher has not necessarily completed the data reduction stream; the displays may lead to a need to recode the data and to look for additional patterns. According to Miles and Huberman, the most frequent form of data display in qualitative research is text. They, however, believe that more complex displays provide more valid research conclusions. Thus, they propose two primary families of displays: matrices, which are composed of defined rows and columns, and networks, which are composed of a series of nodes with links between them. Matrices primarily are used for crossing two or more main dimensions or variables to determine how they relate. Networks primarily are used for providing narratives about events over time as well as showing complex interactions of variables. Within each of these families, Miles and Huberman propose multiple variations. Since the primary goal of the interviews is to examine common practices and routines in SEMAs, rather than describe events over time, matrices are the more appropriate type of display for summarizing the data and findings. Two of the multiple matrices that Miles and Huberman outline were employed in the analysis of the interview data: checklist matrices and clustered summary matrices.

The checklist matrix helps researchers analyze a single variable or concept, such as how SEMAs communicate with Hispanics. Miles and Huberman (1994) observe that checklist matrices are especially useful for exploring new domains, which is ideal for this dissertation.

The checklist matrix contains several components of a single variable, but it does not necessarily order these components. The rows of the matrix contain the various components of the variable, and the columns contain the factors of interest. For example, a checklist matrix for the targeting of Hispanics would have rows outlining how Hispanics are targeted with crisis communication and the columns may consist of an example of each targeting strategy and how commonly each strategy is employed. Thus, the overarching analysis strategy for a checklist matrix is noting patterns or themes and making comparisons.

Clustered summary matrices are used to highlight cross-case similarities and differences. These matrices are created by partitioning the data from other matrices and clustering like themes together into the new summary matrix. The major themes are displayed in the rows of the matrix and the columns highlight examples from multiple informants. Clustered summary matrices are ideal for bringing together final insights and conclusions. Miles and Huberman (1994) affectionately refer to this class of matrices as “monster-dogs” (p. 178).

Atlas.ti, a computer program designed to help researchers conduct more systematic and thorough qualitative analyses, assisted with the coding and data displays. Miles and Huberman (1994) state computer-aided analysis can reduce analysis time, make procedures more systematic and explicit, and permit flexibility and revision in analysis procedures. They write “By now it is largely taken for granted that you need a good word processor to do qualitative research. . .But it’s also fair to say that the researcher who does not use software beyond a word processor will be hampered in comparison with those who do” (pp. 43-44).

The third concurrent stream that Miles and Huberman (1994) recommend is by far the most significant: drawing and verifying conclusions. Miles and Huberman outline 12 tactics for generating meaning

1. Noting patterns or themes
2. Seeing plausibility
3. Clustering
3. Making metaphors
4. Counting
5. Making contrasts/comparison
6. Partitioning variables
7. Subsuming particulars into general
8. Factoring
9. Noting relations between variables
10. Finding intervening variables
11. Building a logical chain of evidence
12. Making conceptual/theoretical coherence

The tactics are selected based upon the research study. Depending upon the research study, not all of the tactics may be employed. The most important part of this stream, however, is verification by both going back to the data and to the participants. Once a conclusion is tentatively reached, the researcher should re-examine the codes and data displays for any information that may support or counter the conclusion. The researcher should also ask the participants and others unfamiliar with the study to verify the soundness of the conclusions. Thus, Miles and Huberman's three-stream approach to qualitative data analysis provides the researcher with detailed guidance from the start of the research design through the data collection and to the final conclusion drawing.

Through applying Miles and Huberman's (1994) three-stream data analysis approach, I noted several significant findings from the SEMA interviews. The following table summarizes these findings.

Table 2.2: Overview of the SEMA interview findings

<p><b>Finding 1:</b> Many of the SEMAs in the interview sample do not provide disaster information in Spanish.</p>
<p><b>Finding 2:</b> Some SEMAs, however, provide limited disaster information in Spanish.</p>
<p><b>Finding 3:</b> Local governments primarily are responsible for developing disaster information in Spanish.</p>
<p><b>Finding 4:</b> FEMA helps SEMAs develop disaster information in Spanish after disasters occur.</p>
<p><b>Finding 5:</b> Partnerships are critical for developing disaster information in Spanish.</p>
<p><b>Finding 6:</b> Tensions exist between the various levels of government.</p>

Many of the SEMA communicators in the interview sample do not provide disaster information in Spanish. Reasons given for not providing this information include the following: the communicators do not have the time and financial resources to develop Spanish-language materials; the SEMAs lack Spanish-speaking employees; some communicators believe Hispanics do not use the same outlets as the mainstream public; and it is not the SEMAs' responsibility to develop disaster information for Hispanics.

All of the SEMA communicators mentioned that they have limited time and financial resources to develop any communication piece—in English or Spanish. The communicators repeatedly used the phrase “wearing multiple hats” to describe their daily activities. One communicator from a Western state said, “There just never is enough time in the day to do

everything I want to do in English. I can't even think about doing things in Spanish.”

Furthermore, some of the communicators worked for other departments in addition to their state SEMA, including the state police department, state department of health, and state department of education. These communicators had even less time to develop unique disaster communication for Hispanics.

Closely linked to lack of time was lack of financial resources to develop disaster information for Hispanics. All of the communicators talked about how limited finances negatively affected the quality and diversity of their communication outreach. For example, one communicator from the Midwest said:

We never have enough resources. We print our materials in black and white on matte paper. I get so mad when I see FEMA's materials and they're printed in six colors on glossy paper. We just don't have the resources to do that.

Other communicators talked about not having enough resources to meet the public's demand for their communication pieces, such as calendars, magnets, and brochures.

A couple of the SEMA communicators said they do not produce communication in Spanish because no one on their staff speaks Spanish. For example, a communicator from the Southeast talked about how she tried to hire a Hispanic public information officer, but hired an Anglo woman who minored in Spanish in college instead. She said:

One of things we tried to do the last position I had to fill in the public affairs office was to hire someone who speaks Spanish. We do have a young lady who got her minor in Spanish. She can understand it more than she can speak it. It's not ideal, but it's better than nothing.

Several other communicators also recognized that having an Anglo provide disaster information in Spanish was not as effective as having a Hispanic provide the same information. For some of these communicators, the lack of Hispanic employees meant they did not provide any communication in Spanish. For other communicators, the lack of

Hispanic employees meant they tried to borrow native Spanish-speakers from other state agencies when possible.

Some of the SEMA communicators said they do not think it is necessary to provide certain types of information in Spanish because Hispanics do not use the same resources as the Anglo public. This comment mainly referred to posting items in Spanish on the SEMAs' Web sites. For example, one communicator from the West said:

We played with the idea of making our Web site bilingual, but the thought process was that most people who are savvy enough to get to the Web that speak another language know how to use Babble Fish and some of those other things. So I don't think we are going to do that.

Other communicators talked about the importance of oral communication in Hispanic culture as a way of explaining why they did not produce more written materials in Spanish.

Finally, all of the communicators thought it was not the SEMA's responsibility to develop disaster information in Spanish. Some communicators thought other state agencies were responsible for developing disaster information in Spanish, such as the office of intercultural affairs or the office of Hispanic affairs. For example, one communicator from the Southeast said:

When the media come and speak with us they want a Hispanic speaker, which is not somebody that knows Castilian Spanish that they learned in college. They want a Hispanic speaker. So you work with people from other state offices through the process of becoming a PIO, at least in the basic PIO class. And they talk with the media during a disaster.

In the same vein, all of the communicators thought county and city emergency managers primarily are responsible for developing disaster information for special-needs populations including Hispanics. This finding will be discussed in greater detail shortly.

Despite the fact that most of the SEMA communicators I interviewed do not provide disaster information in Spanish, some of them provide a smattering of materials for Hispanics.



These materials include Spanish-language tip sheets ( $n = 4$ ), Spanish-English disaster guides ( $n = 1$ ), Spanish-language brochures ( $n = 5$ ), Spanish-language Web sites ( $n = 2$ ), and Hispanic media lists ( $n = 1$ ). Most of this disaster information for Hispanics is developed reactively. For example, some SEMAs provide this information because during a past disaster they failed to communicate with Hispanics, which resulted in detrimental consequences for this population. One SEMA communicator from a Southeast state said:

We had a fairly devastating ice storm in our state a few years back during which we didn't provide any information in Spanish. A couple of immigrants died and now we are more aware of the need to communicate in Spanish.

Others provide this information because activist groups or local governments convinced their SEMA that communicating with Hispanics is necessary. A SEMA communicator from the Midwest said:

Our two biggest cities have had a really big push. They've actually hired someone to do their newsletters, their pamphlets, and their PSAs and different things in Spanish. We at the state level haven't done as much as we need to do. But, now we are using some of the stuff those two cities developed.

Other SEMA communicators mentioned the importance of local activist organizations and the Catholic Church, emphasizing the importance of collaboration in developing disaster information for Hispanics.

In fact, all of the SEMAs in my sample that provide disaster information in Spanish mainly do so through fostering partnerships with other governmental groups or nongovernmental organizations. These partnerships vary by state, with four SEMAs collaborating with the American Red Cross, one SEMA borrowing information from other states, four SEMAs using information developed at the county level, three SEMAs using information developed from other agencies within their states, two SEMAs getting help from FEMA, and two SEMAs working with a Catholic church. For example, one Southeast communicator

commented on how useful the Spanish-language materials provided by the American Red Cross are. He said, “Red Cross does them (PSAs) in Spanish. You know the ones for the Red Cross are just fine. We don’t have to have ours.” Another communicator from the Midwest talked about how the Catholic Church plays a key role in distributing disaster information to Hispanics. “The Church is the outlet that helps us target specific non-English-speaking languages throughout the state.”

Regardless of what partnerships each SEMA fosters, all the SEMA communicators agree their agencies are not the governmental unit responsible for developing information for special-needs populations, including Hispanics. Rather, counties and cities are responsible for communicating with special-needs populations before, during, and after disasters. The SEMA communicators frequently mentioned that the emergency management system is a “bottom-up system” in which the locals primarily manage disaster communication. The state and national governments only become involved when the locals request help. For example, one communicator from the West said:

The way our system is set up is a bottom-up system. We let the locals not only manage their emergencies but also manage their planning and preparedness. The system is designed so that the locals are making the decisions and the state is supporting those rather than the state stepping in and taking over or managing their operations.

This theme of the state as the support agency for the county and city emergency managers was echoed in almost all of my interviews. For example, a communicator from the Midwest said, “The state is the support agency for the local agencies and jurisdictions. There’s an old saying that all politics are local. Emergency management agencies are local too.” Another communicator from the West said:

Emergency management at the local level communicates with vulnerable publics. They know where shelters are going to be and know the special needs of populations. These are local issues that we at the state level rarely need to deal with unless it becomes a support issue. For example, if a local agency needed us to get a translator we could do that.

The SEMA communicators also noted, however, that local governments are over-burdened just like the SEMAs. Thus, even though counties and cities are responsible for communicating with Hispanics, they may not have the personnel and financial resources to fulfill this responsibility. For example, one communicator from the Midwest said, “I would say out of our 15 counties maybe three have someone who is directly responsible for public information or more likely it is someone who wears multiple hats. There is a lot of that unfortunately.” Another communicator from the Midwest also noted that county and city emergency managers are so overburdened with their work that they do not have time to develop any disaster communication in English or Spanish. These locals do not even have time to disseminate disaster communication already produced by their SEMA. She said:

In the last five or six years, in particular, we have piled onto the local emergency managers so many other things that even with all the help the state and I give them, they can't do their job. For example, for severe weather awareness week they may literally only have time to touch base with a TV station, a radio station, and one newspaper in their area, where years before they could go visit the schools, they could run an article or series of articles, they could do their own little monitoring, etc. Their time has gotten so consumed by all these other planning, exercising, and training requirements and reporting they look at me and I say April, severe weather awareness week, and they look at me with the glazed eyes and say oh yeah, right. And I don't blame them.

According to the SEMA communicators, however, the locals are not alone in developing disaster information in Spanish. They noted that the SEMA helps counties and cities when asked to do so. For example, one communicator from the Midwest said:

If necessary, we'll go ahead and probably put out public service announcements or anything that the local governments needs if they are overwhelmed and need our support. Anything they need our support for at all and we would go ahead and help them with that.

Other communicators noted they constantly send the locals tools they can use to develop and disseminate communication pieces. For example, one communicator from the West said:

I send out a weekly information report from our office to local offices of the things that are happening throughout the state such a severe weather awareness week, and those are also available on our Web site. Everything is on our Web site.

The fact that many of the SEMA communicators admitted that they are not in regular contact with the local emergency managers, however, indicated counties and cities most likely do not receive a lot of help from their SEMAs. Locals, however, may receive more help from FEMA, especially after disasters occur.

All of the SEMA communicators mentioned the important role FEMA plays in disaster recovery and especially in developing communication materials for special-needs populations. After disasters, FEMA mainly provides additional resources such as bilingual public information officers and sets up the joint information center. For example, a communicator from the West said:

FEMA is here working out of a joint field office for all of the flooding that occurred. They did send us a multilingual person. And it's great. She has been really helpful for me because she is able to speak Spanish. She's been able to do a lot of stuff that I can't or don't have time to do.

Other communicators noted FEMA staff can help better explain to the public what federal resources are available for disaster survivors. For example, a communicator from the Midwest said:

Well, it takes a huge load off of us because I don't claim to be an expert on how FEMA operates and their programs so certainly when we've got them here they can handle those kinds of questions. And they do the majority of the writing and getting the press releases ready and signed off on their hands and then we handle it on this end.

Despite the additional resources FEMA provides, however, the SEMA communicators I interviewed predominately viewed FEMA's post-disaster help as a necessary evil. This majority recognized they could not handle the post-disaster communication responsibilities without FEMA's help, but they also thought FEMA was not in touch with their states' needs when they arrived after disasters. For example, a communicator from the Southeast said, "Once FEMA comes in we are overrun with Femites. The Femites come in large numbers. They can always put more people in the field than we can and they always show pictures of them, not us, doing anything." Only two of my 13 interview participants expressed an overall positive impression of FEMA, whereas the other 11 expressed highly negative impressions of FEMA. This overwhelming negative impression of FEMA revealed the tensions that exist between the SEMAs and FEMA. Likewise, the finding that the SEMAs believe locals are responsible for developing disaster information in Spanish, but do not have the resources to do so, also highlights the potential for tension among the county, city, and state emergency managers. It is possible that county and city emergency managers may resent the fact that the state has more resources than they do but expects them to develop and distribute disaster information in Spanish.

For the purpose of this dissertation, the most significant findings from the interviews are as follows: (a) SEMAs do not believe they are responsible for communicating in Spanish, (b) those states that provide disaster information in Spanish do so through partnerships; and (c) tensions exist among the federal, state, and county governments. The interview findings also

indicated that the next phase of my research, the survey, must examine the county level of government rather than the state level since the SEMAs unanimously agreed counties primarily are responsible for developing disaster information in Spanish. Also, the survey must further examine the role of relationships in developing disaster information in Spanish given how important partnerships are at the state level. All of the interview findings contributed to the development of the research questions and hypotheses and the survey instrument, which are discussed later. These findings also contributed to the identification of a theory appropriate for analyzing public sector crisis communication: principal-agent theory. In the next section, I provide an overview of principal-agent theory, including how the theory led to the development of research questions and hypotheses for the survey.

### Principal-agent theory

Given that the interviews identified relationships as pivotal for developing disaster information in Spanish, I returned to the literature to find a theory that would help explain the role of relationships in the public sector. I discovered Sylves' 2004 article on the application of political science theory to emergency management. In this article, Sylves observes:

Principal agent theory seems most appropriate for the world of emergency management. Government emergency managers work in a universe of federal, state, local, and private sector agencies. An immense amount of government emergency management work involves the use of private contractors and non-profit volunteer organizations. Information flows among agents and principals, influencing the decision of principals in matters of fund distribution, budgeting, planning, program administration, and management in general. (pp. 7-8)

#### *Origin of principal-agent theory*

Principal-agency theory originated from the field of economics as a way to conceptualize how owners of large firms (principals) can ensure that managers and stakeholders (agents)

make decisions congruent with the owner's desires (Gerber & Teske, 2000; Laffin, 1997; Rees, 1985; Ross, 1973; Simonsen & Hill, 1998). According to the theory, agents are expected to act loyally to the principal, and any benefits that flow to the agent as a result of the contract between the principal and the agent should be revealed to the principal (Simonsen & Hill, 1998). Agents, however, seek ways to "shirk" their work responsibilities and to act in their best interests regardless of the principal's interest (Chubb, 1985; Laffin, 1997). Thus, to ensure that the principal's interests are maintained, principals must reduce the agents' desire and ability to act opportunistically through contractual arrangements and offering incentives, primarily in the form of monetary compensation (Arrow, 1985; Gerber & Teske, 2000; Ross, 1973).

If the agent does not fulfill the contractual agreement with care, duty, and obedience, then a "principal-agent problem" exists (Bendor, 1988; Gerber & Teske, 2000). The heart of this principal-agent problem is information asymmetry and goal conflicts that result from hierarchical relationships (Bendor, 1988; Chubb, 1985). The agent is likely to pursue his or her own interests (resulting in goal conflicts), and the principal is likely to have less information than the agent about the agent's performance (resulting in information asymmetry); (Gerber & Teske, 2000). The principal does not monitor the agent because monitoring is expensive (Bendor, 1988). Thus, the central question is whether the principal can devise an incentive scheme that provides the agent with a stake in the principal's interests (Chubb, 1985; Simonsen & Hill, 1998).

### *Application of principal-agent theory to the public sector*

Although the concept of principal-agent theory existed in the political science literature before 1984, Moe is credited with explicitly introducing the theory into the political science literature (Chubb, 1985; Gerber & Teske, 2000). Principals in the public sector can include citizens, the president, legislator, courts, governors, bureaucrats, interest groups, and others. Agents in the public sector can include bureaucrats, legislators, courts, and others. Moe (1984) argues that principal-agent theory greatly enhances understanding of the problem of political control of bureaucracy, but it must be adapted to better fit the public sector environment. First, politicians as principals in the public sector are not primarily motivated by productive efficiency as are principals in the private sector. Rather, principals in the public sector are motivated by attaining larger budgets, policy support, career opportunities, and security. Thus, because principals are not concerned with economic efficiency, they will not hold agents to the standard of economic efficiency.

Also, public sector principals may not be interested in all of the agents' activities and will only focus on those that directly affect their political careers. Thus, principals are not necessarily motivated to ensure that agents fulfill all of their responsibilities in the public sector. And, even if principals want to monitor agents, political effectiveness, such as reputation, is much harder to measure than economic effectiveness, such as share price.

Public sector principals also are more constrained by accountability requirements and thus have far less flexibility in exerting control over agents than do private sector managers. For example, public sector principals often are not involved in the hiring, firing, and promotion of agents. And, in the public sector, any given agent is controlled by multiple principals. Thus, agents are not under the control of any single principal, which undermines the



principals' political control over agents. To effectively apply principal-agent theory in the public sector, researchers must look at monitoring devices and incentive structures that mitigate the principal-agent problem while still incorporating the multiple principal-agent relationships inherent to the public sector.

Since Moe's seminal article in 1984, other researchers have further developed how principal-agency theory must be modified when applied to the public sector, primarily focusing on information asymmetry and goal conflicts. Researchers note the issue of information asymmetry in the public sector often means that agents, as bureaucrats, may have more expertise in an area than do principals (Ringquist, 1995; Songer, Segel, & Cameron, 1994). Ringquist observes:

Bureaucrats understand standard operating procedures, the intricacies of organizational communication, and the true costs of administrative activities much better than their elected superiors do. Bureaucrats then use this information advantage to obtain resources from these superiors and make policy decisions consistent with bureaucratic values. (pp. 337)

Thus, in the public sector, information asymmetry may produce a positive net yield rather than a negative net yield as it does in the private sector.

Waterman and Meier (1998) note pure information asymmetry may not be as common in the public sector as it is in the private sector. In the public sector, there are multiple agents (both within and across agencies) with potentially multiple and conflicting goals. Also unlike in the private sector, principals in the public sector rarely are unitary actors that speak with one voice (e.g., Congress). Thus, in the public sector, agents have incentives to ally themselves with principals who share their goals and interests. Conversely, when agents do not share principals' goals, agents have an incentive to leak information to competing principals. Further, in the public sector agents may possess more information than principals.

Likewise, researchers note that while in the private sector principals and agents clearly have different goals and/or preferences, this is not necessarily true in the public sector (Waterman & Meier, 1998; Worsham, Eisner, & Ringquist, 1997). In the private sector principals want to maximize profits and agents want to do as little work as possible. But, in the public sector, with a focus on policy, principals and agents may not even possess conflicting goals. Thus, Waterman and Meier (1998) propose treating both information asymmetry and goal conflict as continuous rather than constant variables to account for variability encountered in principal-agent relationships in the public sector.

Critics of principal-agent theory applied to the public sector focus on two related points: blurring of principal-agent roles and the hierarchical relationship proposed by the theory. In the public sector, actors can serve as both agents and principals. Researchers note principals can include citizens, the president, legislators, courts, governors, bureaucrats, interest groups, and others. Agents can include bureaucrats, legislators, courts, and others. The fact that public sector actors can serve as both agents and principals blurs the hierarchical relationships posited by the theory and complicates the application of the theory to the public sector (Gerber & Teske, 2000; Worsham et al., 1997). These dual-role relationships may lead to loose accountability measures (Breauz, Duncan, Keller, & Morris, 2002). Because of this blurring of principal-agent relationships, some researchers claim these complex relationships may nullify any clarifying advantages from principal-agent theory (McCubbins, Noll, & Weingast, 1989; Moe & Wilson, 1994; Waterman & Meier, 1998; Wolley, 1993; Worsham et al., 1997).

Another common critique of principal-agent theory applied to the public sector is the theory construes relationships as rigid, but in the public sector relationships are dynamic

(Feldman & Khademian, 2002; Waterman & Meir, 1998; Worsham et al., 1997). Thus, in the public sector, agents' and principals' goals evolve over time, making goal conflict less relevant in the public sector. Rather than discarding a relatively parsimonious theory of political influence over policy outcomes, however, several researchers argue principal-agent theory should be extended to better fit the public sector (DiIulio, 1994; Gerber & Teske, 2000; Worsham et al., 1997). Ironically, many of the researchers echo the original comments made by Moe (1984).

Worsham et al. (1997) suggest modifying principal-agency theory so that it incorporates the fact that for any policy issue multiple agents work together. Thus, the notion of control is not as important in principal-agent theory applied to the public sector as it is when the theory is applied to the private sector because actors serve as both principals and agents across policy issues and time; this "complex web of interrelationships and activities" muddles sources of communication and authority (p. 435). Worsham et al. also note that the norm for the public sector is disequilibrium, and policy formulation and application are not fluid. Political organizations are dynamic, constantly adapting to policy changes and receiving information from a variety of sources, including the public and private sector. Further, principals can choose from a wide variety of strategies in order to control agents. And, agents are less likely to be self-interested when their policy goals are congruent with the principal's policy goals regardless of compensation. Significantly, contractual methods of control as proposed by the original principal-agent theory may not be as useful as other methods of control.

DiIulio (1994) adds many researchers have erroneously concluded that principal-agent theory is better at explaining why bureaucrats shirk than at explaining why bureaucrats

behave as “principled agents:” workers who do not shirk even without incentives. The true value of principal-agent theory as applied to the public sector is explaining why agents do not shirk. DiIulio observes people who want meaningful job challenges, not just job security, and who desire compensation for extra effort are not interested in government jobs. Thus, researchers applying principal-agent theory to the public sector need to explain why intangible incentives, such as public good, drive some government employees to not shirk.

Principal-agent theory has been applied to a wide variety of topics in the field of political science: relationships between citizens and officials (Kalt & Zupan, 1984); legislative bodies, coalitions, and bureaucratic agencies (Banks & Weingast, 1992; Bendor, Taylor, & Van Gaalen, 1987; Calvert, Moran, & Weingast, 1987; Epstein & O’Halloran, 1994; Laffin, 1997; McCubbins, 1985); public policy impact and adoption (Breauz et al., 2002; Feiock & West, 1993; Ringquist, 1995); legislative control of bureaucracy (Ogul & Rockman, 1990); congressional leadership (Sinclair, 1999); higher and lower courts (Brent, 1999; Songer et al., 1994); presidential appointees and agencies (Moe, 1985; Wood 1988, 1989; Wood & Waterman, 1991, 1993); and upper- and lower-level bureaucrats (Hammond, 1986; Miller, 1992). A search of the literature did not reveal any previous applications of principal-agent theory to public relations.

#### *Principal-agent theory applied to government public communication*

Applied to government public communication, principal-agent theory examines the development and implementation of communication policy issues such as providing Spanish-language disaster information. The key to understanding how the theory is applied to

government public communication is understanding how information asymmetry and goal conflicts affect policy issues.

Information asymmetry may emerge when principals do not monitor how agents address a policy issue. Agents often have more knowledge about how to best address policy issues because they are closer to the people the issues affect. As a result, principals may believe that it is best for agents to address policy issues. However, agents may decide they do not want to address a policy issue for various reasons (lack of skills, lack of time, lack of interest, etc.). Thus, if there is no formal monitoring system between the principals and agents, agents may decide to ignore the policy issue, thereby shirking their responsibilities. Principals, however, may not be aware that the agents decided to ignore a policy issue because no formal monitoring system exists. The end result may be that a policy issue is left unaddressed by principals and agents alike. Conversely, the agents may decide to address the policy issue in a manner counter to the principals' interests. Once again because there is no monitoring system, principals do not know how the agents address the policy issue.

Goal conflict emerges when principals and agents do not have the same goals for a policy issue. For example, the Department of Homeland Security may think fighting terrorism abroad is the number-one priority, while local government officials may think developing communication materials about natural disaster mitigation is the number-one priority. The result of goal conflicts is that agents have the opportunity to shirk by not implementing the principal's goal. If the agents decide to shirk, they can shirk by passing the principal's goal off to another agent, or agents can shirk by pursuing their own goals to the extent that is possible. The latter form of shirking is most effective when principals do

not closely monitor agents' actions and agents have the financial resources to pursue their own goals. Of course, it also is possible that agents may fulfill their responsibilities of addressing the policy issue.

By applying principal-agent theory to the survey of county emergency managers, I analyze the complex relationships among the multiple actors who formulate decisions on whether and how to develop Spanish-language disaster information. Focusing on the potential for goal conflicts and information asymmetry, I will determine if and how county relationships with FEMA, states, other counties, community groups, private sector organizations, and public interest groups affect the development of Spanish-language disaster information.

#### Research questions and hypotheses

The application of principal-agent theory combined with the interview insights led to the development of the following research questions and hypotheses for the second phase of the research, a survey of county emergency management directors.

RQ1: What channels do counties employ to provide disaster information in Spanish before, during, and after disasters?

This question explores what channels counties use to reach Hispanics, such as brochures, public service announcements, and flyers. The list of channels the survey tested came from the SEMA interviews and a content analysis examining the communication materials available on all 50 SEMA Web sites (Liu, 2006b). Based on the interview findings, I predict the majority of the counties will not provide disaster information in Spanish. Further, based on the interview findings, I predict counties that do provide disaster information in Spanish report relying on written rather than oral channels of communication. If my second prediction

is supported, this finding would be significant given that Hispanic culture prioritizes oral over written communication (Marin & Marin, 1991).

H1a: *Most counties do not provide disaster information in Spanish.*

H1b: *Counties that provide disaster information in Spanish primarily use written channels of communication (e.g., brochures, news releases, and fact sheets) rather than oral channels of communication (e.g., public service announcements, video news releases, and community meetings).*

The second research question explores factors that affect whether counties provide disaster information in Spanish. It is important to measure the relative importance of relationships compared to other factors because principal-agent theory poses that the relationship between principals and agents control the development of public policy, such as providing disaster information in Spanish. In the case of emergency management, however, it is possible that more practical considerations, such as budget, control the development of public policy.

RQ2: What factors affect whether counties provide Spanish-language disaster information before, during, and after disasters?

H2a: *The larger the county emergency management staff, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

H2b: *The larger the local Hispanic population, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

H2c: *The more annual fiscal support provided by the national, state, and county governments for public communication, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

H2d: *The larger the average number of disasters experienced in a year in the state and county, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

H2e: *The larger the number of Spanish-speaking emergency management employees the county has, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

*H2f: The more groups the county works with to provide disaster information in Spanish, the greater the number of channels counties employ to communicate Spanish-language disaster information.*

The third research question measures the potential for information asymmetry among the national, state, and local governments. As defined by principal-agent theory, information asymmetry exists when principals and agents possess different information about a policy issue. For my dissertation, information asymmetry exists when the national, state, and local governments possess different information about how to communicate disaster information to Hispanics. One way to measure whether these governments possess different information is through identifying with who counties work with to develop Spanish-language disaster information. If counties overall work with the same groups to provide disaster information in Spanish, then the potential for information asymmetry may be less. Conversely, if counties work unilaterally or with different groups, then the potential for information asymmetry may be greater. To measure the potential for information-asymmetry from the county perspective, research question three asks:

RQ3a: How often do county emergency managers work with various governmental and nongovernmental groups to provide disaster information in Spanish?

In addition, research question three also asks when counties work most with groups: before, during, and after disasters. This second part of research question three helps identify when information-asymmetry is most likely to emerge, if at all, among the county, state, and federal governments.

RQ3b: Do counties work most with governmental and nongovernmental groups before, during, and/or after disasters to provide disaster information in Spanish?

Both parts of research question three compare how often counties work with governmental groups to nongovernmental groups before, during, and after disasters. It is important to



compare governmental to nongovernmental groups to measure the importance of nongovernmental groups in developing disaster information for Hispanics. Nongovernmental groups may be able to ameliorate information-asymmetry among various levels of government. Likewise, nongovernmental groups may be more influential in helping counties develop disaster information in Spanish. Thus, the possibility for information-asymmetry among county, state, and local governments may be less significant because these nongovernmental groups may frequently work with all levels of government, sharing how to best provide disaster information in Spanish.

The fourth and fifth research questions measure the degree of goal conflict between the county and city, county and state, and county and national governments. Principal-agent theory states goal conflict occurs when principals and agents have different goals for a policy issue. For my survey, I measure goal conflict with two questions. Research question four asks:

RQ4: Who do county emergency managers believe should be responsible for producing disaster information in Spanish?

Based on the SEMA interviews, I found that states believe counties are most responsible for producing disaster information in Spanish. Depending upon who the county emergency management directors believe is responsible for producing disaster information in Spanish, I may find that a goal conflict exists between the states and counties as to who is responsible for producing disaster information in Spanish.

Research question five further probes for the existence of goal conflicts by asking:

RQ5: How capable do county emergency managers believe governmental and nongovernmental groups are of producing high quality Spanish-language disaster information?

It is important to ask how capable various groups are of producing disaster information because goal conflicts are likely to be more complicated, and thus more influential, when agents think principals are responsible for producing Spanish-language disaster information, but are not capable of producing this information. For example, my interviews revealed that while states think FEMA partially is responsible for helping provide Spanish-language disaster information, they do not believe FEMA is capable of producing high quality Spanish-language disaster information.

No specific hypotheses were produced for research questions three, four, and five given that this is the first study to apply principal-agent theory to public sector crisis communication. Further, very limited research has been conducted on emergency management, making it difficult to draw from the literature to create hypotheses for these research questions.

#### The survey instrument

The survey instrument contains five sections of questions. The first section collects data on how many channels counties employ to communicate English-language and Spanish-language disaster information. The respondents identified whether they employ each of 15 different channels to communicate disaster information in English and/or Spanish. The second section collects data on who the respondents believe should be responsible for producing disaster information in Spanish. The respondents rated 12 groups on a scale of one (low responsibility) to five (high responsibility). The third section collects data on who the respondents believe is most capable of producing high quality disaster information in Spanish. The respondents rated 12 groups on a scale of one (low capability) to five (high capability).

The fourth section collects data on how often the counties work with particular groups to provide disaster information in Spanish. The respondents rated 13 groups on a scale of one (not often) to five (very often). The respondents also indicated whether they worked most often with each of the groups before, during, and/or after disasters. The last section collects background data on the counties. This section has 17 background questions such as the size of the local Hispanic population, the total communication budget, and the number of Spanish-speaking emergency management employees counties have. Appendix B displays the survey.

#### Research phase II: Survey of county emergency management communicators

The next section outlines the sample, data collection, and data analysis techniques for the survey.

#### *Survey sample, data collection techniques, and data analysis procedures*

I decided to conduct a survey because I want to provide a baseline of how counties develop and provide Spanish-language disaster information. A survey allows the collection of a large amount of valid and reliable data in a relatively short amount of time. A survey also leads to the identification of “best practice” examples for future research by identifying counties that are doing a superior job of developing crisis information for Hispanics.

I designed the survey questionnaire from the SEMA communicators interview findings and the literature. I selected counties as the population because all of the SEMA communicators I interviewed agreed counties are responsible for communicating with special-needs populations, including Hispanics. The dissemination of the survey followed the

tailored design method outlined by Dillman (2000) and was administered via mail, Internet, and telephone. Participants selected the response method that best fit their needs and preferences.

The purpose of the survey is to understand the extent to which county emergency management directors and their staff communicate with Hispanics before, during, and after disasters. Also, the survey aims to test the explanatory power of principal-agent theory for public sector crisis communication research.

### *Validity.*

There are three main types of validity identified in the literature as important for quantitative research: content, concurrent, and construct (Creswell, 2003). The most important type of validity for survey research is content validity, which evaluates whether the survey instrument measures what it is intended to measure (Creswell, 2003; Nardi, 2003; Wimmer & Dominick, 2003). For this study, content validity was strengthened by pre-testing the survey instrument with 19 members of the emergency management community. The pre-test participants included city emergency managers, county emergency managers, and state emergency management directors from across the country. Most importantly, the pre-test helped refine the instructions for each set of questions, ensuring that the respondents conceptualized the questions the same way that I did. For example, when I asked the pre-test participants how they defined capability to produce Spanish-language disaster information, they agreed that capability was based on financial resources, communication expertise, and Spanish-language skills. The pre-test also helped add important missing categories to the background questions, add additional questions to the background section, and reformat the

survey into a grid format. Thus, the pre-test significantly changed the wording and structure of the survey instructions and questions.

*Sample.*

I mailed the survey to a purposive sample: all of the county emergency management directors within the 10 states with largest Hispanic populations and the 10 states with the quickest growing Hispanic populations ( $N = 1,535$ ). Researchers select purposive samples when the sample displays certain desirable characteristics or traits, such as counties with large or rapidly growing Hispanic population (Fowler, 2002; Nardi, 2003), or when the researcher is limited by time or finances (Comstock & McCombs, 1981; Fowler, 2002). A common critique of purposive samples is that they are not generalizable to the population (Babbie, 2005; Comstock & McCombs, 1981; Creswell, 2003). Since the purpose of the survey is to provide baseline information about how counties communicate disaster information to Hispanics, it is important to survey counties that are likely to communicate with Hispanics. The interviews with the SEMA communicators highlighted that most states and counties are not doing much to communicate disaster information to Hispanics. A random survey of all U.S. counties would most likely replicate these findings without adding much insight. A survey of counties that are most likely to communicate emergency management information to Hispanics, conversely, is likely to produce more meaningful insights.

I obtained the contact information for the county emergency management directors through the state emergency management agencies. Initially, the vast majority of the states had trouble finding this contact information for me. All but one of the states eventually

provided me with the contact information for their county emergency management directors; I had to find the contact information for New York's county emergency management directors through searching online. Also, many of the states provided outdated addresses and phone numbers for their county emergency management directors. Most of the states did not have the names of their county emergency management directors.

*Administration.*

Before administering the survey, I obtained IRB approval for the survey instrument and recruitment materials. I followed Dillman's tailored design survey method (2000) to administer the survey:

1. Sent a brief prenotice letter to the county emergency managers.
2. Mailed a detailed cover letter.
3. Mailed a thank-you postcard.
4. Mailed a replacement questionnaire to nonresponders.
5. Called nonresponders.

The purpose of these steps is to increase the survey's response rate. In addition, I obtained the endorsement of the International Emergency Managers Association, the largest professional emergency management association. The executive director of the association wrote a letter (displayed in Appendix C) encouraging counties to complete the survey, which I mailed with the survey questionnaire.

The first step of my recruitment process involved sending a prenotice letter, which briefly outlined the purpose and significance of the study and why the recipient received the letter. The letter, displayed in Appendix D, focused on building anticipation rather than providing

details about study participation (Dillman, 2000). Research shows that sending prenotice letters significantly increases the response rate for surveys (Dillman, 2000; Dillman, Clark, & Sinclair, 1995; Fowler, 2002; Wimmer & Dominick, 2003). The letter was sent nonprofit bulk mail and arrived only a few days before the first questionnaire.

The second step involved mailing the questionnaire, a brief cover letter, and the International Association of Emergency Manager's endorsement letter. The purpose of the one-page cover letter (displayed in Appendix E) was to explain why the recipient was being contacted and why the survey was useful and important (Dillman, 2000). By highlighting the importance of the study, researchers can increase response rates (Comstock & McCombs, 1981). The cover letter was printed on university stationary, dated, and signed by the researcher. The cover letter explained confidentiality and gave the participants a person to contact if they have questions (Dillman, 2000). In addition, the cover letter explained that by completing the survey the participants were consenting to participate in the research study. Finally, the cover letter offered the opportunity to complete the enclosed mail survey or to complete the survey online. Offering two methods of completing the survey increases the survey response rate (Dillman, 2000). The questionnaire, cover letter, and endorsement letter were sent nonprofit bulk mail and included a postage-paid return envelope for the survey.

The third step, the thank you postcard, jogged the memory of participants who had responded and thanked participants who already have responded (Dillman, 2000). Research indicates that nearly half of survey respondents postmark their surveys within two to three days after they receive them (Dillman, 2000). Thus, the postcard, displayed in Appendix F, was sent about a week after the survey questionnaire was sent to encourage nonresponders to complete the survey—either the print version they were mailed or the online version.

Although it would have been ideal just to send the postcard to nonresponders, the entire sample received the postcards because it would have been too time consuming to identify the nonresponders given the short time frame in which the postcards had to be mailed (Dillman, 2000). By making the postcard dual purpose, to thank responders and remind nonresponders, the postcard sent a relevant message to all members of the sample.

The fourth step, sending the replacement questionnaire with a follow-up letter, was only sent to nonresponders to stimulate response (Babbie, 2005; Dillman, 2000). This follow-up letter, displayed in Appendix G, had a different tone than the previous mailing: it was more insistent and urgent than the previous contacts (Dillman, 2000). The follow-up letter encouraged county emergency management directors to complete the mail questionnaire or complete the survey online. The replacement questionnaire and follow-up letter were sent about three weeks after the first questionnaire was sent.

The fifth, and final contact, involved calling the participants to ask if they had any questions about the survey. During this phone call, I offered the opportunity of completing the survey over the phone or online. Dillman (2000) notes that phone calls can reassure participants who are confused about the nature of the study and encourage participants to complete the survey. Fowler (2002) states that a personal contact can be significantly more effective than a letter in persuading people to participate in research. Administering surveys by multiple modes can significantly increase the response rate but can also introduce potential sources of mode differences including social desirability, acquiescence, question-order-effects, and primacy/recency effects. Social desirability refers to the fact that people are more likely to give socially desirable answers when responding to questions over the phone than in print (Dillman, 2000; Wimmer & Dominick, 2003). Acquiescence is the



tendency for people from some cultures to agree with the researcher regardless of the topic, which is a potential problem especially during phone interviews (Dillman, 2000). Question-order effects describe the potential for respondents to change their answers to one question based upon another question, which is a potential problem for mail interviews (Dillman, 2000). Finally, primacy/recency effects refer to the tendency to choose the first-offered answer category rather than the last-offered answer category in telephone surveys (Dillman, 2000).

Sources of potential mode differences for the survey of county emergency management directors include socially desirable answers, question-order effects, and primacy/recency effects. Acquiescence is not a potential source of mode differences since all of the respondents are acculturated into American culture and thus not come from cultures in which acquiescence is likely to be a problem. To moderate the potential for the other three sources of mode differences, the surveys completed via mail and via telephone were compared.

As other researchers have noted, both mail and telephone surveys possess several limitations. For mail surveys, the researcher does not have control over who responds and what percentage responds (Comstock & McCombs, 1981; Miller, 1991; Trochim, 2001; Wimmer & Dominick, 2003). Also, mail surveys do not allow the researcher to probe or ask for elaboration (Comstock & McCombs, 1981). Response rates for mail surveys tend to be lower than for telephone surveys (Fowler, 2002; Wimmer & Dominick, 2003), and the data collection period takes longer (Babbie, 2005; Fowler, 2002). Those who answer mail surveys may differ significantly from those who do not answer the surveys (Babbie, 2005; Miller, 1991). Finally, question-order effects are more of a problem for mail surveys because responders are capable of changing answers to early questions based upon answers to later

questions (Dillman, 2000). Limitations for telephone surveys include a higher likelihood for negative acquiescence and social desirability effects (Dillman, 2000). Despite these limitations, a survey is the best method to obtain a large amount of data because it is more cost effective and less time consuming than qualitative methods such as interviews (Babbie, 2005; Miller, 1991; Wimmer & Dominick, 2003).

The next chapter presents the findings from the survey, beginning with the response rate and then comparing the data collected from the mail and telephone survey administrations. The chapter concludes with the results from the analyses of the survey data.

### **Chapter 3: Survey Implementation and Findings**

#### Sample and response rate

After I compiled the addresses for all 1,535 county emergency management agencies, the post office identified 106 of these addresses as undeliverable. I could not find alternative addresses for these agencies and consequently removed them from the sample. Thus, the first three survey mailings were sent to 1,429 county emergency management directors. Three weeks after the replacement survey (the fourth and final mailing) was sent to all nonresponders, I had received a total of 227 completed mail surveys and three completed Internet surveys. Within these surveys, 12 responders reported that they managed two counties, three responders reported they managed three counties, and two responders reported they managed five counties. Thus, the total individual directors that could respond to the survey was lowered from 1,429 to 1,403, yielding a 16.4% response rate from the four survey mailings.

Following Dillman's tailored design procedure, I called a random sample of the nonresponders to obtain completed surveys from 10% of the nonresponders ( $n = 117$ ). To obtain these 117 surveys, I made 757 phone calls. Of these 757 phone calls, I spoke with 199 directors. I was not able to reach the other 558 directors because they were either out of the office or in a meeting. Thirteen of these 199 directors said they had already completed the mail survey. Of the remaining 186 directors, 100 completed the telephone survey and 17 completed the Internet survey, for a response rate of 62.9% for the telephone administration. While conducting the phone calls, I also received an additional 88 surveys in the mail,

making the total count for the mail surveys 318 and the total count for the phone surveys 117. Thus, the total response rate for the survey was 31% ( $n = 435$ ).

### Comparing the mail and telephone respondents

Before conducting the analyses to address my research questions, I first determined whether there was a statistically significant difference between the responses from the mail and telephone survey administrations. To determine whether the mail and phone samples responded differently to the survey questions, I conducted a series of independent sample  $t$ -tests for the survey's demographic and content variables. I did not find significant differences for the 12 demographic variables (Table 3.1) but did find some significant differences for the nine content variables (Table 3.2). However, after controlling for the family wise error rate using Bonferroni's correction ( $\alpha = .002$ ), only two of the  $t$ -tests indicated a statistically significant difference: the total number of channels counties employ to communicate English-language disaster information and the total number of channels for which counties do not provide disaster information in English or Spanish. Because I did not find significant differences for the 12 demographic variables for the mail and telephone survey respondents I decided to analyze the data as one sample while keeping in mind that two of the content variables did differ significantly.

Table 3.1: Results from the *t*-tests comparing mail and telephone responses for demographic variables

<b>Variable</b>	<b>Mail</b>	<b>Telephone</b>	<b><i>t</i></b>	<b><i>p</i></b>
Full-time employees	<i>M</i> = 2.84 <i>SD</i> = 5.26	<i>M</i> = 2.30 <i>SD</i> = 6.10	.906	.365
Part-time employees	<i>M</i> = 1.16 <i>SD</i> = 2.86	<i>M</i> = 1.15 <i>SD</i> = 5.03	.003	.997
Volunteers	<i>M</i> = 17.47 <i>SD</i> = 41.00	<i>M</i> = 25.50 <i>SD</i> = 70.20	-1.16	.246
Number of Spanish-speaking employees	<i>M</i> = 1.04 <i>SD</i> = 3.42	<i>M</i> = 1.24 <i>SD</i> = 3.20	-.522	.602
Number of state disasters in past five years	<i>M</i> = 5.69 <i>SD</i> = 6.29	<i>M</i> = 5.99 <i>SD</i> = 5.70	-.386	.700
Number of county disasters in past five years	<i>M</i> = 3.85 <i>SD</i> = 4.05	<i>M</i> = 3.27 <i>SD</i> = 3.53	1.34	.181
Budget for public communication	<i>M</i> = 238.12 <i>SD</i> = 890.59	<i>M</i> = 413.90 <i>SD</i> = 1692.93	-.849	.398
Percent of budget for information in Spanish	<i>M</i> = 6.15 <i>SD</i> = 15.23	<i>M</i> = 4.23 <i>SD</i> = 11.61	1.20	.231
Ideal public communication budget	<i>M</i> = 4918.86 <i>SD</i> = 13436.22	<i>M</i> = 3954.17 <i>SD</i> = 9922.70	.327	.745
Percent of ideal budget for information in Spanish	<i>M</i> = 21.59 <i>SD</i> = 21.00	<i>M</i> = 27.71 <i>SD</i> = 24.19	-2.47	.014
Years in current position	<i>M</i> = 7.69 <i>SD</i> = 7.89	<i>M</i> = 8.47 <i>SD</i> = 8.53	-.890	.374
Years employed in EM	<i>M</i> = 11.09 <i>SD</i> = 9.99	<i>M</i> = 12.36 <i>SD</i> = 9.89	-1.17	.243

Table 3.2: Results from the *t*-tests comparing mail and telephone respondents for content variables

<b>Variable</b>	<b>Mail</b>	<b>Telephone</b>	<b><i>t</i></b>	<b><i>p</i></b>
Responsibility	<i>M</i> = 31.89 <i>SD</i> = 11.86	<i>M</i> = 35.41 <i>SD</i> = 11.97	-2.740	.006
Capability	<i>M</i> = 30.05 <i>SD</i> = 11.75	<i>M</i> = 30.64 <i>SD</i> = 10.77	-.475	.635
Channels employ to communicate in English	<i>M</i> = 8.02 <i>SD</i> = 3.80	<i>M</i> = 9.30 <i>SD</i> = 3.99	-3.06	.002*
Channels employ to communicate in Spanish	<i>M</i> = 2.73 <i>SD</i> = 2.92	<i>M</i> = 2.74 <i>SD</i> = 3.06	-.034	.973
Total number of English-only channels	<i>M</i> = 5.35 <i>SD</i> = 3.52	<i>M</i> = 6.58 <i>SD</i> = 4.52	-2.674	.008
Total number of Spanish-only channels	<i>M</i> = .050 <i>SD</i> = .259	<i>M</i> = .034 <i>SD</i> = .182	-.034	.973
Total number of channels in both languages	<i>M</i> = 2.68 <i>SD</i> = 2.87	<i>M</i> = 2.72 <i>SD</i> = 3.04	-.129	.897
Total number of channels in neither language	<i>M</i> = 6.97 <i>SD</i> = 3.82	<i>M</i> = 5.65 <i>SD</i> = 3.94	3.18	.002*
Who work with	<i>M</i> = 19.48 <i>SD</i> = 12.95	<i>M</i> = 15.45 <i>SD</i> = 15.10	2.56	.011

\**t*-test is significant

#### Research question one

The first research question asks what channels counties employ to communicate disaster information in Spanish. Table 3.3 displays the percentages and rankings of the channels counties employ to communicate disaster information in English only, Spanish only, both

languages, and neither language. Hypothesis 1a predicted most counties do not provide disaster information in Spanish. Seventy percent of the respondents employ at least one channel to communicate Spanish-language disaster information, rejecting hypothesis 1a.

Table 3.3: Percentages and rankings of channels counties employ to communicate disaster information in English only, Spanish only, both languages, and neither language\*

Channel	English Only		Spanish Only		Both Languages		Neither	
	Percent	Rank	Percent	Rank	Percent	Rank	Percent	Rank
Brochures	35%	8	<1%	7	50%	1	14%	14
Disaster guides	37%	7	1%	1	42%	2	21%	13
PSAs	50%	3	<1%	7	21%	5	29%	11
Newsletters	29%	11	<1%	7	9%	11	65%	4
News releases	68%	1	<1%	7	18%	6	13%	15
Magnets	24%	14	<1%	7	4%	14	69%	2
Coloring books	31%	10	1%	1	24%	4	45%	7
Community meetings	61%	2	1%	1	13%	9	25%	12
Church meetings	45%	5	1%	1	15%	8	40%	9
Fact sheets	35%	8	1%	1	27%	3	38%	10
Video news releases	27%	13	1%	1	6%	12	66%	3
Advertising	38%	6	0%	13	11%	10	52%	6
Hotlines	29%	11	<1%	7	18%	6	54%	5
Web page	48%	4	0%	13	8%	13	44%	8
Billboards	11%	15	0%	13	3%	15	86%	1

\*Numbers are rounded to the nearest tenth; some rows add up to more than 100%.

However, on average, the counties employ about nine different channels to communicate English-language disaster information, but only about three different channels to communicate Spanish-language disaster information. Thus, although the majority of the counties employ at least one channel to communicate disaster information in Spanish, they

employ on average three times more channels to communicate disaster information in English than in Spanish. Providing more English-language channels, however, does not necessarily mean counties provide higher quality or better disaster information in English.

Table 3.3 also ranks the channels counties employ to communicate disaster information from most commonly employed to least commonly employed for each of the four language categories. All of the two most commonly provided channels are written rather than oral for the English-only, both languages, and neither language categories.

Examining the percentages of counties that provide each channel in English and/or Spanish (displayed in Table 3.4) reveals that counties provide much more oral information in English than in Spanish. Seventy-one percent of counties provide PSAs in English, but only 21% provide PSAs in Spanish. Seventy-five percent of counties provide community meetings in English, but only 14% provide community meetings in Spanish. Sixty percent of counties provide church group meetings in English, but only 15% of counties provide church group meetings in Spanish. Thirty-four percent of counties provide video news releases in English, but only 7% percent provide video news releases in Spanish. Finally, 46% of counties provide hotlines in English, but only 18% provide hotlines in Spanish. Table 3.4 also reveals that hypothesis 1b is confirmed. Counties employ more channels to communicate written information in Spanish than oral information in Spanish.



Table 3.4: Percentages of channels counties employ to communicate disaster information in English and Spanish

<b>Channel</b>	<b>English</b>	<b>Spanish</b>
	Percent	Percent
PSA	71%	21%
Community meetings	75%	14%
Church meetings	60%	15%
Video news releases	34%	7%
Hotlines	46%	18%
Advertising	49%	11%
Fact sheets	62%	27%
Web page	57%	8%
Billboards	14%	3%
Brochures	85%	51%
Disaster guides	78%	42%
Newsletters	38%	9%
News releases	86%	18%
Magnets	29%	5%
Coloring books	55%	24%

### Research question two

Research question two asks what factors affect the channels counties employ to communicate Spanish-language disaster information before, during, and after disasters. I conducted a series of Pearson correlations to answer this research question. I found significant positive relationships between the number of channels counties employ to communicate Spanish-language disaster information for all nine factors tested. The results for the correlations are displayed in Table 3.5.

Table 3.5: Factors associated with the number of channels counties employ to communicate Spanish-language disaster information

<b>Factors</b>	<b><i>r</i></b>	<b><i>r</i><sup>2</sup></b>	<b><i>n</i></b>
Size of county EM staff	.193*	.037	433
Size of county Hispanic population	.232*	.054	381
Level of fiscal support provided by federal, state, and county governments	.230*	.053	430
Total communication budget	.194*	.038	265
Percentage of communication budget for Spanish-language information	.442*	.195	399
Number of state disasters in past five years	.198*	.039	312
Number of county disasters in past five years	.137*	.019	400
Number of Spanish-speaking employees	.209*	.044	428
Number of groups work with	.403*	.162	435

\*correlation is significant at the .01 level

Hypothesis 2a predicted the larger the county emergency management staff, the greater the number of channels counties employ to communicate Spanish-language disaster information. The correlation indicated a significant relationship between the size of the staff and the number of channels counties employ to communicate Spanish-language disaster information ( $r = .193$ ). According to Cohen (1988), a correlation value between .10 and .29 is small, a correlation value between .30 and .49 is medium, and a correlation value between .50 and 1.0 is large. Thus, the correlation between the size of the county emergency management staff

and the channels counties employ to communicate Spanish-language disaster information is small. But, the staff size only accounts for 3.7% ( $r^2 = .037$ ,  $p = <.0005$ ) of the total variance in the number of channels counties employ. On average, the counties have three full-time employees ( $SD = 5.5$ , range = 0 to 50), one part-time employee ( $SD = 3.6$ , range = 0 to 50), and 20 volunteers ( $SD = 50.6$ , range = 0 to 500). Volunteers include full-time county emergency management directors, administrative assistants, and community members who help with disaster responses. Twenty-one percent of the survey respondents are part-time employees and 75% are full-time. These figures, however, may be misleading given that the survey question from which I obtained these data asked whether the respondents were full-time or part-time employees in their current positions. A better question to ask would have been whether the respondents were full or part-time emergency managers.

Hypothesis 2b predicted the larger the local Hispanic population, the greater the number of channels counties employ to communicate Spanish-language disaster information. The correlation indicated a significant positive relationship between the size of the local Hispanic population and the number of channels counties employ to communicate Spanish-language disaster information ( $r = .232$ ,  $p <.0005$ ). This correlation, however, is small by Cohen's (1988) standards. Also, the size of the local Hispanic population only accounts for only 5.4% ( $r^2 = .054$ ) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information.

Hypothesis 2c predicted the more annual fiscal support provided by the federal, state, and county governments, the greater the number of channels counties employ to communicate Spanish-language disaster information. The correlation confirmed this hypothesis, but the relationship between these two variables is small ( $r = .230$ ,  $p <.0005$ ). Also, the total fiscal

support provided by all three levels of government only accounts for 5.3% ( $r^2 = .053$ ) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information.

By dividing the total fiscal support variable into three fiscal support variables, one for each level of government, I conducted three additional tests to determine whether fiscal support provided by one level of government has a stronger relationship with the number of channels counties employ to communicate Spanish-language disaster information. I found that the relationship between the level of fiscal support provided by the federal government and the number of channels counties employ was the smallest ( $r = .141$ ,  $n = 435$ ,  $p < .0005$ ), accounting for only 2% ( $r^2 = .020$ ) of the total variance in the number of channels counties employ. The relationship between the level of fiscal support provided by the state government and the number of channels counties employ to communicate Spanish-language disaster information was slightly stronger ( $r = .166$ ,  $n = 431$ ,  $p < .0005$ ), accounting for 2.8% ( $r^2 = .028$ ) of the total variance in the number of channels counties employ. The relationship between the level of fiscal support provided by the county government and the number of channels counties employ to communicate Spanish-language disaster information was the strongest of the three ( $r = .269$ ,  $n = 373$ ,  $p < .0005$ ), accounting for 7.2% ( $r^2 = .072$ ) of the total variance in the number of channels counties employ. However, the results from a Fisher log z-test, displayed in Table 3.6, indicate that the three correlations are not significantly different from one another

Table 3.6: Comparison of correlations between government fiscal support and channels counties employ to communicate Spanish-language disaster information

<b>Correlation comparison</b>	<i>z</i>	<i>p</i>
Level of fiscal support provided by federal government to state government	-.38	.71
Level of fiscal support provided by federal government to county government	-1.96	.05
Level of fiscal support provided by state government to county government	-1.58	.11

Examining the relationship between the counties’ total public communication budgets and the number of channels counties employ to communicate Spanish-language disaster information, I found a small positive correlation ( $r = .194, p < .0005$ ), accounting for 3.8% ( $r^2 = .038$ ) of the total variance in the number of channels counties employ. The average public communication budget for the counties is about \$287, ranging from zero dollars ( $n = 175$ ) to \$10,550 ( $n = 1$ ). About 40% of the counties did not answer this question, indicating they may not have a direct line item in their budget for communication. Or, the respondents representing these counties may not have provided this information because they thought it was sensitive.

I found a larger correlation between the percentage of the public communication budget dedicated to Spanish-language information and the number of channels counties employ to communicate Spanish-language disaster information ( $r = .442, p < .0005$ ). By Cohen’s (1988) standards, this correlation is considered medium. The percentage of the public communication budget dedicated to Spanish-language information accounts for 19.5% ( $r^2 = .195$ ) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information. Of the counties that have a communication budget, about 66% of them dedicate 0% of this budget to Spanish-language disaster information. The

remaining 34% spend between 1% to 100% of their total communication budget on Spanish-language disaster information ( $M = 6\%$ ).

Hypothesis 2d predicted the larger the average number of disasters experienced in the state and county, the greater the number of channels counties employ to communicate Spanish-language disaster information. A small positive relationship was found between the number of state disasters experienced and the number of channels counties employ to communicate Spanish-language disaster information ( $r = .198, p < .0005$ ). The number of state disasters experienced only accounts for 3.9% ( $r^2 = .039$ ) of the total variance in the number of channels counties employ. A slightly smaller correlation was found between the number of county disasters experienced and the number of channels counties employ to communicate Spanish-language disaster information ( $r = .137, p < .0005$ ). This correlation, however, also is small. The number of county disasters experienced only accounts for 1.9% ( $r^2 = .019$ ) of the total variance in the number of channels counties employ.

Hypothesis 2e predicted the larger the number of Spanish-speaking employees the county has, the greater the number of channels counties employ to communicate Spanish-language disaster information. A small positive relationship was found for this hypothesis ( $r = .209, p < .0005$ ), accounting for 4.4% ( $r^2 = .044$ ) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information. Only 29% of the counties have at least one employee or volunteer who speaks Spanish. However, 53% of the counties have access to at least one Spanish-speaker for disaster planning, 63% have access to at least one Spanish-speaker for disaster response, and 62% have access to at least one Spanish-speaker for disaster recovery.

Hypothesis 2f predicted the more groups counties work with to provide disaster information in Spanish, the greater the number of channels counties employ to communicate Spanish-language disaster information. A medium positive relationship was found for this hypothesis ( $r = .404, p < .0005$ ). The number of groups counties work with to provide Spanish-disaster information accounted for 16.2% ( $r^2 = .162$ ) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information.

Finally, to definitively determine which of the factors I tested has the strongest relationship with the number of channels counties employ to communicate Spanish-language disaster information, I conducted a Fisher's log  $z$ -test. This test compared the size of the correlations for the two factors that have the strongest relationship with the number of channels counties employ: percentage of communication budget for Spanish-language information and the number of groups counties work with to provide Spanish-language information. The results for the  $z$ -test indicate that the two correlations are not significantly different ( $z = .683, p = .49$ ).

### Research question three

The first part of research question three asks how often county emergency management directors work with various governmental and nongovernmental groups listed to provide disaster information in Spanish. Table 3.7 presents the findings. In general, directors work with all 13 groups to provide Spanish-language disaster information, but only on a limited basis as evidenced by the low median and mean scores. Directors work most often with state emergency management agencies, FEMA and/or the Department of Homeland Security (DHS), employees from other county emergency management agencies, county agencies

other than emergency management, state agencies other than emergency management, and volunteer organizations active in disasters (VOAD).

Table 3.7: How often county emergency management directors work with specific groups to provide Spanish-language disaster information\*

<b>Group</b>	<b>N/A (0)</b>	<b>Not often (1)</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Very often (5)</b>	<b>Median</b>	<b><i>M</i></b>	<b><i>SD</i></b>
State EMA	20%	32%	10%	14%	10%	14%	1.00	2.04	1.72
FEMA/DHS	20%	41%	12%	11%	6%	10%	1.00	1.72	1.54
County agencies other than EM	25%	35%	11%	12%	10%	8%	1.00	1.69	1.57
Employees from other county EMA	27%	36%	14%	8%	10%	6%	1.00	1.55	1.50
State agencies other than EM	25%	36%	16%	12%	7%	5%	1.00	1.54	1.41
VOAD	28%	37%	13%	13%	6%	3%	1.00	1.43	1.34
City mayors	30%	41%	10%	9%	7%	3%	1.00	1.33	1.36
Governor	28%	44%	10%	8%	5%	4%	1.00	1.32	1.34
City EMs	35%	38%	9%	9%	4%	4%	1.00	1.21	1.34
Local religious organizations	32%	39%	13%	9%	5%	3%	1.00	1.23	1.26
Local ethnic organizations	35%	35%	15%	8%	4%	3%	1.00	1.19	1.27
Private sector organizations	35%	40%	11%	8%	3%	2%	1.00	1.12	1.20
State legislators	35%	46%	9%	6%	3%	2%	1.00	1.02	1.11

\*Frequencies are rounded to the nearest tenth; some rows add up to more than 100%.

Directors work least often with city mayors, governors, city emergency managers, local religious organizations, local ethnic organizations, private sector organizations, and state legislators. It is important to note, however, that a large percentage of the directors do not work at all with each of the groups. In addition, there is a lot of variance in how often



directors work with the groups as evidenced by the relatively large standard deviations for each group.

The second part of research question three asks do county emergency management directors work most with the groups before, during, and/or after disasters to provide disaster information in Spanish. Table 3.8 displays the results. In general the percentages of when directors work with the groups are relatively consistent for before, during, and after disasters. This means that if directors work with these groups, they tend to work with them equally before, during, and after disasters. One notable exception to this rule is FEMA/DHS. About 39% of the directors work with FEMA/DHS before disasters, 35% work with FEMA/DHS during disasters, and 49% work with FEMA/DHS after disasters. Thus, directors tend to work much more with FEMA after disasters than before and during disasters. It is important to note, however, that the majority of the directors indicated they did not work with these groups at all before, during, and after disasters.

Table 3.8: Disaster phase when county emergency management directors work with groups to provide Spanish-language disaster information

Group	Before Crises		During Crises		After Crises	
	Percent	<i>n</i>	Percent	<i>n</i>	Percent	<i>n</i>
FEMA/DHS	39	170	35	152	49	213
SEMA	51	222	48	209	48	209
State agencies other than EM	39	169	35	152	37	161
Governor	28	121	26	113	34	148
State legislators	23	100	18	78	29	126
Employees from other county EMAs	40	174	35	152	36	157
County agencies other than EM	43	187	38	165	39	170
City mayors	40	174	36	157	34	146
City emergency managers	33	143	27	117	27	117
VOAD	33	144	30	131	33	144
Local ethnic organizations	23	100	20	87	23	100
Local religious organizations	29	126	24	104	28	122
Private sector organizations	27	117	24	104	25	109

#### Research question four

Research question four asks who county emergency management directors believe should be responsible for producing disaster information in Spanish. Table 3.9 summarizes how the directors rated each group and displays the medians, means, and standard deviations for each group's overall rating. Examining the medians and means displayed in Table 3.9, there is a clear downward trend from the federal to state to local governments in terms of who directors believe should be responsible for producing disaster information in Spanish. This means that directors believe FEMA/DHS has the highest responsibility, followed by the state emergency management agency, governor's office, local ethnic groups, and state agencies other than emergency management. Likewise, county emergency management agencies and other county agencies are viewed as more responsible than city mayors. Interestingly, local ethnic organizations, volunteer organizations active in disasters, and local religious organizations all have higher means and medians than do local government groups. This finding means that directors believe nongovernmental groups are more responsible for producing Spanish-language disaster information than local governments. It is important to note, however, that there is a lot of variance in how directors rated the groups as evidenced by the relatively large standard deviations.

Table 3.9: Who county emergency management directors believe should be responsible for producing Spanish-language disaster information

<b>Group</b>	<b>N/A (0)</b>	<b>Low responsibility (1)</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>High responsibility (5)</b>	<b>Median</b>	<b>Mean</b>	<b>SD</b>
FEMA/DHS	4%	2%	3%	10%	14%	68%	5	4.30	1.28
State EMA	3%	5%	4%	18%	28%	43%	4	3.91	1.28
Governor	9%	13%	10%	18%	20%	31%	4	3.20	1.67
Local ethnic organizations	13%	9%	11%	19%	21%	26%	3	3.04	1.71
State agencies other than EM	10%	13%	12%	26%	20%	20%	3	2.92	1.58
Volunteer organizations active in disasters	15%	18%	13%	25%	15%	15%	3	2.53	1.64
Local religious organizations	12%	25%	21%	24%	9%	10%	2	2.25	1.47
County agencies other than EM	11%	29%	19%	22%	12%	8%	2	2.20	1.45
City emergency managers	18%	25%	14%	21%	12%	12%	2	2.20	1.62
Employees from county EMAs	12%	32%	16%	23%	7%	11%	2	2.15	1.51
Private sector organizations	12%	29%	19%	23%	9%	9%	2	2.12	1.45
City mayors	14%	32%	17%	20%	8%	9%	2	2.04	1.49

## Research question five

Research question five asks how capable do county emergency management directors believe various governmental and nongovernmental groups are of producing high quality disaster information in Spanish. Table 3.10 summarizes the results. Once again, there is a downward trend from federal government to local government in how capable the managers think the groups are of producing high quality Spanish-language disaster information. FEMA/DHS received the highest mean and median capability scores, followed by the state, county, and city groups. Interestingly, the nongovernmental groups (volunteer organizations active in disasters, local ethnic organizations, local religious organizations, and private sector organizations) received higher capability scores than the local government groups. It is important to note, however, that there is a lot of variability in how directors scored these groups as evidenced by the relatively large standard deviations and the differences exhibited in the mean and median values.

Table 3.10: How capable county emergency management directors believe groups are of producing Spanish-language disaster information

<b>Group</b>	<b>N/A (0)</b>	<b>Low Capability (1)</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>High Capability (5)</b>	<b>Median</b>	<b>Mean</b>	<b>SD</b>
FEMA/DHS	5%	5%	4%	13%	18%	56%	5	4.00	1.42
State EMA	5%	5%	6%	20%	28%	35%	4	3.66	1.42
State agencies other than EM	9%	13%	13%	30%	17%	19%	3	2.88	1.54
Governors	9%	10%	14%	22%	18%	27%	3	3.11	1.61
Local ethnic organizations	15%	15%	14%	21%	15%	21%	3	2.68	1.73
Volunteer organizations active in disasters	14%	20%	19%	28%	10%	10%	2	2.30	1.49
Local religious organizations	13%	25%	22%	24%	7%	9%	2	2.14	1.44
County EMA	12%	29%	22%	23%	9%	6%	2	2.06	1.37
Private sector organizations	16%	28%	20%	21%	8%	7%	2	1.98	1.44
County agencies other than EM	12%	32%	24%	22%	8%	3%	2	1.90	1.26
City emergency managers	19%	32%	19%	17%	6%	7%	1	1.80	1.43
City mayors	14%	43%	21%	15%	5%	4%	1	1.67	1.25

## Summary

The analyses of the survey data found that most counties (70%) employ at least one channel to communicate Spanish-language disaster information. Counties, however, employ on average three times more channels to communicate English-language disaster information than channels to communicate Spanish-language disaster information. Providing more English-language channels, however, does not necessarily mean counties provide higher quality or better disaster information in English. Counties also provide more written than oral Spanish-language disaster channels. Thus, hypothesis 1a, the prediction that most counties would not provide Spanish-language disaster information, was not confirmed. However, hypothesis 1b, the prediction that the counties would provide more written than oral Spanish-language disaster information, was confirmed.

Hypotheses 2a through 2f also were confirmed. I found significant positive relationships between how much Spanish-language disaster information counties provide and the size of the county emergency management staff; the size of the local Hispanic population; the fiscal support provided by federal, state and county governments; the average number of disasters experienced in the county and state; and the number of groups counties work with to provide Spanish-language disaster information. Only two of these correlations, however, yielded positive medium values ( $r = .30$  to  $.49$ ): working with groups and percentage of the communication budget dedicated to Spanish-language information. Working with groups accounted for 16.2% ( $r^2 = .162$ ) of the total variance in how many channels counties employ to communicate Spanish-language disaster information. Percentage of the communication budget dedicated to Spanish-language information accounted for 19.5% ( $r^2 = .195$ ) of the variance in how many channels counties employ to communicate Spanish-language disaster

information. The other four correlations yielded small positive correlation values ( $r = .10$  to  $.29$ ) and accounted for very little of the variance in how many channels counties employ to communicate Spanish-language disaster information (1.9% to 5.4%).

Examining how often county emergency management directors work with various groups to provide Spanish-language disaster information, I found that directors work with all 13 of the groups tested, but only on a limited basis. Directors work most often with FEMA/DHS and state emergency management agencies and least often with city mayors, governors, city emergency managers, local religious organizations, local ethnic organizations, private sector organizations, and state legislators. A sizeable proportion of directors do not work at all with these groups. Directors that work with these groups work consistently with them before, during, and after disasters to provide Spanish-language disaster information. One major exception to this finding is FEMA/DHS; directors work much more often with FEMA/DHS after disasters than before and during disasters.

Examining who directors think should be responsible for producing Spanish-language disaster information, there is a clear downward trend from federal to state to local government. Directors think FEMA/DHS followed by the state emergency management agencies are the most responsible for providing Spanish-language disaster information and local governments are the least responsible for providing Spanish-language disaster information. Non-governmental groups (volunteer organizations active in disasters, private sector organizations, local religious groups, and local ethnic groups) fall in the middle—they are perceived as more responsible than local government, but less responsible than the federal and state governments.



Finally, examining who directors believe is most capable of producing Spanish-language disaster information, there also is a clear downward trend from federal to state to local government. Directors also rank non-governmental groups as more capable than local government, but less capable than the federal and state governments.

In the next chapter, I discuss the limitations of the interview and survey data and the major implications of the survey and interview findings, both practical and theoretical. The chapter concludes with what the findings mean for how best to communicate Spanish-language disaster information.

## **Chapter Four: Discussion and Conclusions**

Before any conclusions can be made, it is imperative to discuss the limitations of the study. First, as already noted, the interviews provide many interesting findings but because these findings are qualitative the interview data are not generalizable. Second, the relatively low response rate from the survey (31%) means that I must be cautious when making generalizations to the entire population. In addition, because there is a lot of variability in the population of county emergency management agencies, as evidenced by the relatively large standard deviations scores my sample displayed, definitive statements about the population must also be viewed with some caution. Nevertheless, both the interviews and survey data provide many interesting insights that can inform both practice and theory when these limitations are taken into account.

### **Optimizing data collection with emergency managers**

The high response rate from the telephone survey administration (62.9%) compared to the relatively low response rate from the mail survey administration (22.7%) indicates this population is much more responsive to telephone than mail surveys. Because most of the county emergency managers have small staffs (on average three full-time employees, one part-time employee, and 20 volunteers), it is likely they are willing to participate in research but are so busy that they need the extra push of a personal phone call to motivate them to participate. Overall, however, this population seems interested in research, probably because emergency management has only recently become an academic research topic. In addition, this population is interested in research that can help improve their job performance. I received 10 phone calls and multiple emails from the mail survey respondents asking for

resources to help them better provide Spanish-language disaster information. Most of these respondents also asked if I would be conducting further research in this area or on other language minorities. Two respondents invited me to speak at local conferences and more than 20 respondents included personal business cards with their survey responses, inviting me to contact them with any questions. Thus, it seems like this research area has a lot of potential to meaningfully affect how emergency managers communicate with Hispanics and other special-needs populations.

#### The number of channels states and counties employ to communicate Spanish-language disaster information

One of the goals of this dissertation was to provide a baseline of how much Spanish-language disaster information states and counties provide. From the 13 interviews, I found most of the states represented in the interviews do not provide very much Spanish-language disaster information. This finding was surprising given that all the communicators I interviewed either represented states with one of the 10 largest Hispanic populations or one of the 10 quickest growing Hispanic populations in the country. From the survey of county emergency management directors, I found 70% of the responding counties employ at least one channel to communicate Spanish-language disaster information, but the responding counties employ almost three times more channels to communicate English-language disaster information than to communicate Spanish-language disaster information. Thus, it is reasonable to conclude that the counties employ more channels to communicate Spanish-language disaster information than the states do. But overall, states and counties employ significantly fewer channels to communicate disaster information in Spanish than in English.

Providing more English-language channels, however, does not necessarily mean counties provide higher quality or better English-language disaster information.

It also is important to note that the states and counties that participated in my research employ more written than oral channels to communicate Spanish-language disaster information. As the literature review revealed, Hispanics are more responsive to oral rather than print information (Marin & Marin, 1991). Thus, these states and counties would be more effective communicating disaster information to Spanish speakers if they provided more information orally. Interestingly, most of the counties surveyed provide oral information (community meetings, church meetings, video news releases, hotlines, and public service announcements) in English, but not in Spanish. This means that the surveyed counties have the necessary skills and networks to provide oral information in English. Thus, the counties also should have the skills to provide this same information in Spanish if they develop networks with Hispanic community groups and churches. Such networks also would provide these counties with access to more Spanish-speakers who could help develop public service announcements, lead community meetings, and develop other community-specific Spanish-language information. Greater access to Spanish-speakers is especially important given that only 29% of the survey respondents have at least one employee or volunteer who speaks Spanish. And, the Spanish-language material provided by FEMA and the American Red Cross are not community-specific.

Although it is important to document the channels counties and states employ to communicate disaster information in Spanish, it is even more important to document how states and counties distribute this information. If states and counties employ a lot of channels to communicate Spanish-language disaster information, but do not distribute this information,

then the number of channels counties employ is meaningless. From the interviews, I found that the states believe counties are responsible for developing and distributing Spanish-language disaster information to the public. Thus, in general, the states do not directly produce nor distribute Spanish-language disaster information to the public. The survey did not ask how counties distribute disaster information to Hispanics. One county emergency manager from Florida, however, called me to ask whether he should mark on the survey all of the Spanish-language channels his county employs given that his agency does not distribute this information at all. Future research needs to investigate how, if at all, counties distribute Spanish-language disaster information.

Another missing variable from both the interview and survey data is the quality of Spanish-language disaster information the states and counties provide. While it is important to know how much Spanish-language information they provide, if this information is poorly translated or poorly produced, its usefulness is weakened.

Initial anecdotal evidence suggests there is a wide variety in the quality of Spanish-language disaster information counties provide. The survey mail respondents had the option of including examples of Spanish-language disaster information they provide in the pre-paid envelope with their survey. Only 19 respondents included such information. Most of the information the counties mailed were FEMA and American Red Cross brochures and disaster guides ( $n = 30$ ). I also received two FEMA coloring books. In addition, three counties mailed brochures and disaster guides developed by their county emergency management agencies; one county mailed a disaster pocket guide created by the county department of health services; one county mailed a flyer created by the county emergency management agency; and one county mailed a magnet that displayed the county emergency management agency's

contact information. However, it is clear that among these 19 counties there is a wide range in quality of the Spanish-language disaster information they provide. Some of the information appears to be professionally produced, especially the information developed by FEMA and the American Red Cross. Conversely, some of the information appears to be less sophisticated, especially the information developed by the counties.

#### Factors that affect the number of channels counties employ to communicate Spanish-language disaster information

To determine what factors affect the number of channels counties employ to communicate Spanish-language disaster information, the survey tested relationships between the following nine factors and the variety of channels: size of county emergency management staff; size of county Hispanic population; level of fiscal support provided by federal, state and county governments; total public communication budget; percentage of public communication budget dedicated to Spanish-language disaster information; number of state and county disasters in past five years; number of Spanish-speaking employees; and number of groups counties work with to provide Spanish-language disaster information. As predicted, I found significant positive Pearson correlations for all of these factors. None of the factors, however, are highly correlated with the variety of channels counties employ to communicate Spanish-language disaster information. Also, most of the factors account for very little of the total variance in the number of the channels counties employ to communicate Spanish-language disaster information.

Seven of these nine factors have only a small relationship with the number of channels counties employ to communicate Spanish-language disaster information ( $r = .137$  to  $.232$ ). The percentage of the public communication budget dedicated to Spanish-language

information has the largest relationship with the number of channels counties employ, with a medium correlation value ( $r = .442$ ). This percentage accounts for 19.5% of the total variance in the number of channels counties employ to communicate Spanish-language disaster information (19.5%). The data collected on the percentage of the public communication budget dedicated to Spanish-language information, however, may be misleading.

Approximately 39% of the respondents did not report their total public communication budget, but only about 8% of the respondents did not report the percentage of their total communication budget dedicated toward Spanish-language information. Thus, it is possible the respondents did not know their total communication budget, thereby making the Spanish-language percentages they supplied suspect. Conversely, respondents may not have reported their total communication budgets because they did not want to make their budgets public knowledge.

The relationship between the number of groups counties work with to provide Spanish-language disaster information and the number of channels counties employ to communicate Spanish-language disaster information also produced a medium correlation value ( $r = .403$ ), accounting for 16.2% (16.2%) of the total variance in the number of channels counties employ to communicate Spanish-language disaster information. Although the correlation value for the percentage of the public communication budget dedicated to Spanish-language information was slightly larger than the correlation value for the number of groups counties work with, the results from a Fisher's log  $z$ -test indicate there is no statistically significant difference in the size of these two correlations ( $z = .683, p = .49$ ). This finding provides evidence to support the application of principal-agent theory to emergency management research.

Principal-agent theory suggests that intergovernmental relationships affect how policy issues are developed and implemented. The findings from the correlations indicate that working with governmental and nongovernmental groups and the size of the Spanish-language communication budget, rather than the other factors I tested, have the strongest connection with the number of channels counties employ to communicate Spanish-language disaster information. Since correlations do not provide evidence of causality, however, it is not possible to conclude that working with groups and having a large Spanish-language disaster communicate budget causes counties to employ more Spanish-language disaster communication channels. Nevertheless, the correlations provide at least initial evidence that principal-agent theory can help explain the number of channels counties employ to communicate Spanish-language disaster information because relationships (working with groups) has one of the strongest relationships with the number of channels counties employ to communicate Spanish-language disaster information.

The logical next question to consider answering is whether there are factors that have stronger relationships with the number of channels counties employ to Spanish-language disaster information than the factors I tested. It is important to investigate whether other factors would produce stronger correlation values than the factors I tested to continue evaluating whether principal-agent theory provides the best theoretical explanation. Other factors that might explain what drives county emergency managers to provide Spanish-language disaster information include whether county emergency management directors have a public information officer on staff; the directors' level of public relations expertise and experience; how important directors think it is to provide Spanish-language disaster information; and how much Spanish-language disaster information the state or federal



governments automatically send to directors versus how much information these directors have to seek out themselves.

#### Who SEMA communicators and county emergency management directors work with to provide Spanish-language disaster information

The interviews revealed that SEMA communicators who provide Spanish-language disaster information do so through working with various groups including the American Red Cross, local ethnic organizations, local religious organizations, counties, and cities. Likewise, the survey findings indicate that county emergency management directors sometimes work with these same groups in addition to state agencies, state legislators, and private sector organizations to provide Spanish-language disaster information. County emergency management directors work most often with their state emergency management agency, FEMA/DHS, county agencies, and volunteer organizations active in disasters (VOADs) to provide Spanish-language disaster information. Directors work least often with city groups, local religious and ethnic groups, and private sector organizations to provide Spanish-language disaster information. Thus, there appears to be a downward trend from federal to state to local government in terms of how often directors work with various levels of government to provide Spanish-language disaster information.

County emergency management directors may work most often with state and federal agencies and VOADs because these organizations provide the managers with free disaster support materials. These groups also are easy to identify. Conversely, city groups, local religious and ethnic groups, and private sector groups are not as likely to provide directors with support materials. Thus, there is less of an obvious incentive for directors to work with these groups. Also, local religious, local ethnic, and private sector groups are harder to

identify than government groups. Thus, directors may not have the time to actively form partnerships with these nongovernmental groups. Finally, it is possible that directors do not work often with religious groups because these directors believe in a separation of church and state.

However, since directors display a large variance in how they rate these groups (as evidenced by the large standard deviations for each group's mean score), it is not possible to conclude which groups directors work with most often to provide Spanish-language disaster information. This large variation, however, does lead to the conclusion that there is no standard system for obtaining Spanish-language disaster information. Just like SEMA communicators, directors do not converge on working most often with the same groups to provide Spanish-language disaster information. Thus, either no groups have identified themselves as leaders in providing Spanish-language disaster information or, more likely, county emergency management directors are not aware of the resources select groups can provide. Since FEMA and the American Red Cross provide an extensive variety of free Spanish-language disaster information online and in print, it is reasonable to assume that these two groups are leaders in providing Spanish-language disaster information. Both the state communicators I interviewed and the county emergency management directors I surveyed, however, clearly do not identify FEMA and the American Red Cross (a VOAD) as the primary groups they work with to provide Spanish-language disaster information. Future research needs to explore why SEMA communicators and county directors do not identify FEMA and the American Red Cross as leaders in providing Spanish-language disaster information and do not work with them more frequently.

It also is important to note that a sizeable percentage of county emergency management directors do not work with the 13 groups I tested at all (ranging from 20% to 35% of directors not working with each group). This finding is important because out of all the factors I tested, working with groups has one of the strongest relationship with the variety of channels counties employ to communicate Spanish-language disaster information. Thus, it is possible that if directors do not work with any groups, they are much less likely to provide Spanish-language disaster information.

The theoretical implication of the finding that SEMA communicators and county directors do not work consistently with the same groups to provide Spanish-language disaster information is that the potential for information-asymmetry increases among the federal, state, and local emergency management agencies. As defined by principal-agent theory, information asymmetry exists when principals and agents possess different information about a policy issue. Information asymmetry can be problematic because principals frequently believe agents should be responsible for addressing policy issues (because agents are closer to the people these issues affect), but principals often do not have a system to monitor how agents address the issues. Thus, agents have the opportunity to shirk from their responsibilities by not adequately resolving a policy issue or passing the issue onto another agent to resolve. Because principals do not have a system to monitor agents' activities, these principals are not aware when agents shirk (if at all).

For this dissertation, information asymmetry exists when principals expect agents to provide Spanish-language disaster information but do not monitor whether the agents actually provide this information. One form of monitoring is having a clear channel through which principals and agents communicate about how best to provide Spanish-language

disaster information. I measured the existence of such a channel when asking the SEMA communicators and county emergency management directors who they work with to provide Spanish-language disaster information. Because I found inconsistency in whom the SEMA communicators and county directors work with, I conclude there is not a clear channel through which principals and agents communicate with each other. Thus, it appears that SEMA communicators and county directors have an opportunity to shirk by either passing on the responsibility of providing Spanish-language disaster information to another agent or simply not providing sufficient Spanish-language disaster information. This is an important finding because when SEMA communicators and county directors shirk, the end result is Hispanics who only speak Spanish are much less likely to know how to prepare for, respond to, and recover from disasters in an unfamiliar country. This finding also is important theoretically because it supports the application of principal-agent theory to public sector crisis communication research, providing a new perspective on why public sector organizations may fail to properly manage crises. This theoretical finding is discussed in greater detail later in this chapter.

Who should be responsible for producing Spanish-language disaster information

State communicators and county directors both believe they are not primarily responsible for producing Spanish-language disaster information. The state communicators all agreed that local emergency managers are responsible for providing Spanish-language disaster information. Interestingly, the county directors rated local government as the least responsible for providing Spanish-language disaster information. These directors believe FEMA/DHS is most responsible, followed by the state government. In fact, county

emergency management directors believe volunteer organizations active in disasters and local religious and ethnic organizations are more responsible than local governments for producing Spanish-language disaster information. It is important, to note, however, that there is a lot of variability in how directors scored each of the groups. But, even accounting for this variability, directors still rate FEMA/DHS and the states as having more responsibility than local emergency managers. In addition, looking at how often directors scored FEMA/DHS and the state emergency management agency with the highest responsibility (68% and 42%, respectively) further highlights that directors consider these two groups the most responsible compared to the other groups.

Thus, there is strong evidence that a goal conflict exists between the state and county emergency management representatives as to who is responsible for providing Spanish-language disaster information. According to principal-agent theory, goal conflict emerges when principals and agents do not agree on how to address a policy issue. When a goal conflict emerges, agents have the opportunity to shirk by not fully addressing the policy issue or passing responsibility for addressing the issue to another agent. Conversely, agents can pursue their own policy interests, which may run counter to the principals' interests. The state emergency management agencies shirk by only producing a limited number of Spanish-language channels and passing the responsibility for producing Spanish-language disaster information off to county emergency managers. Likewise, county emergency management directors shirk by passing the same responsibility off to anyone but themselves and city emergency managers. The implication of this goal conflict is that since no one is taking responsibility for producing Spanish-language disaster information, little Spanish-language disaster information is being produced at the state and county levels.

## Who is most capable of producing Spanish-language disaster information

County emergency management directors believe that FEMA/DHS is most capable of producing Spanish-language disaster information. Directors rate state agencies and their governor as the next most capable, followed by non-governmental groups (volunteer organizations active in disasters, ethnic and religious groups, and private sector organizations). County and city government groups, including emergency management, receive the lowest capability scores. Again, the variability in these scores makes it difficult to derive concrete conclusions. However, looking at how many directors scored each of the groups as highly capable, FEMA/DHS and state emergency management agencies clearly emerge as the top two groups that directors believe are the most capable of producing Spanish-language disaster information (56% scored FEMA/DHS as highly capable and 35% scored SEMAs as highly capable). Conversely, city mayors and county agencies other than emergency management emerge as the top two groups that directors believe are least capable of producing Spanish language disaster information (4% scored city mayors as highly capable and 3% scored county agencies other than emergency management as highly capable). These findings mirror the findings about who county emergency management directors believe should be responsible for producing Spanish-language disaster information, at least partially explaining why directors rated these groups on their respective responsibility levels.

It is interesting that directors scored FEMA/DHS as the most responsible for providing Spanish-language disaster information and the most capable of providing Spanish-language disaster information, but most of the SEMA communicators described FEMA/DHS as a necessary evil. The state communicators knew they had to interact with FEMA/DHS,

especially after disasters, but for the most part found these interactions to be painful and inefficient. Although it is impossible to know what county emergency management directors think of their interactions with FEMA/DHS from the quantitative data I collected, it is possible to conclude that many more of the county directors work with FEMA/DHS after disasters (49%) to provide Spanish-language disaster information than work with FEMA/DHS before (39%) and during (35%) disasters. Thus, it is reasonable to conclude that states and counties are not taking full advantage of the free Spanish-language disaster resources FEMA/DHS provides before disasters occur. This conclusion provides additional evidence that information asymmetry exists between FEMA and the state county emergency management agencies because the states and counties mostly are in contact with FEMA/DHS only during and after disasters occur.

#### Next steps: Future research directions

Results from the interviews and survey leave many questions unanswered, questions that should be addressed by future research. First, interviews should be conducted with county emergency management directors to identify what factors, other than the ones tested in the survey, affect the variety of channels counties employ to communicate Spanish-language disaster information. Potential untested factors include whether county emergency management directors have a public information officer on staff; the directors' level of public relations expertise and experience; how important directors think it is to provide Spanish-language disaster information; and how much Spanish-language disaster information the state or federal governments automatically send to directors versus how much information these directors have to seek out themselves. These interviews also should examine how county

emergency management directors distribute Spanish-language disaster information that they provide and from what groups directors obtain Spanish-language disaster information.

Finally, these interviews should explore why some directors shirk their responsibility of providing Spanish-language disaster information and others do not. Legitimacy gap theory may add insight into why public servants shirk. The theory explains discrepancies in an organization's behavior and society's expectations of that organization (Bridges, 2004). Legitimacy gap theory identifies three organizational responsibilities that motivate behavior: legal, economic, and moral. It is possible that these same responsibilities determine whether public servants shirk their responsibilities.

Second, interviews should be conducted with the FEMA/DHS and American Red Cross officials responsible for developing and distributing Spanish-language disaster information. These interviews should examine who FEMA/DHS and the Red Cross officials think should be responsible for developing and providing Spanish-language disaster information. This information is important because thus far I have tested principal-agent theory at the state and local levels but have not tested the theory at the federal level. Thus, my analysis is missing a key principal, FEMA, in the disaster system. Also, it is important to understand the Red Cross's perspective because it is a potentially influential nongovernmental group that thus far appears to be treated as an untapped resource by the state and local governments. These interviews should examine how FEMA/DHS and the Red Cross distribute Spanish-language disaster information and specifically how they interact with state and county officials. This information is important because so far my data indicate that the states and counties are not interacting frequently with FEMA/DHS and the Red Cross.



Third, interviews should be conducted with Hispanic disaster survivors to assess how effective all levels of government are at communicating with Hispanics before, during, and after disasters. Thus far, my research has examined only the management side of disasters and has not addressed the audience side. Through addressing the audience side researchers will be able to better assess the quality of Spanish-language information provided by governmental and nongovernmental groups before, during, and after a specific disaster occurs. These interview should focus on how the Hispanic disaster survivors received information about the disaster before, during, and after the disaster occurred and how the survivors perceive their interactions with governmental and nongovernmental groups before, during, and after the disaster occurred. These interviews also should examine the awareness-attitude-behavior chain, the likelihood that having access to more Spanish-language disaster information affects Hispanics' attitudes about disasters and behaviors before, during, and after disasters.

Fourth, a survey of members of all groups active in providing Spanish-language disaster information should be conducted to further test the applicability of principal-agent theory to emergency management research. The findings from the dissertation research and the proposed additional interviews would help inform the development of the questionnaire for this survey. The results of this proposed survey would provide a complete picture of who the primary players in the intergovernmental system believe is responsible for producing and providing Spanish-language disaster information, as well as how often these groups interact with each other. These data would provide a comprehensive test for the applicability of principal-agent theory to the world of emergency management communication.

Fifth, a content analysis should be conducted to evaluate the quality of the Spanish-language materials provided by all levels of government and volunteer organizations active in disasters. It is important to evaluate the quality of these materials to understand how effective these materials are in communicating disaster information to Spanish-speakers. It also is important to evaluate the quality of materials produced at various levels of government to determine who is best equipped to produce disaster information in Spanish.

#### Putting it all together: Implications for how to best communicate Spanish-language disaster information

First and foremost, at least one group needs to take responsibility for producing and providing Spanish-language disaster information, thereby eliminating the goal conflict I found between the state emergency management communicators and county emergency management directors. The state emergency management communicators I interviewed stated that counties primarily are responsible for producing and providing Spanish-language disaster information. Conversely, the county emergency management directors I surveyed stated that FEMA/DHS and the state emergency management agencies primarily are responsible for producing Spanish-language disaster information. Because both representatives from the states and counties deny responsibility for producing and providing Spanish-language disaster information, it appears a policy vacuum exists for this issue. Downs (1967) conceptualized the idea of a *policy space*, in which interdependent governmental organizations interact to provide social functions, such as Spanish-language disaster information. In this *policy space*, organizations struggle to exert influence over the other organizations. In the case of producing and providing Spanish-language disaster information, states and counties predominately do not interact to provide Spanish-language

disaster information. Therefore, the converse of a policy space, a policy vacuum, appears to exist for this policy issue.

It is likely that the same groups should not be responsible for producing and providing Spanish-language disaster information. FEMA/DHS has a much larger communication budget than do the state and county emergency management agencies as evidenced by the wide variety of high quality disaster information FEMA/DHS produces. The state emergency management communicators I interviewed, on the other hand, repeatedly mentioned that they do not have sufficient funds to produce all of the disaster information they would like to produce in any language. Likewise, the extremely small budgets that the county emergency management directors have for public communication in general, and Spanish-language communication in particular, also indicate that counties are not well equipped to produce English-language or Spanish-language disaster communication. Thus, the interview and survey findings indicate that FEMA/DHS, rather than the states and counties, should be responsible for producing Spanish-language disaster information unless the states and federal government are willing to provide the counties with larger communication budgets. However, since states and counties are connected to their local communities, states and counties, rather than FEMA/DHS, should be responsible for providing the Spanish-language information directly to the public. States and counties also should be responsible for adapting FEMA/DHS Spanish-language materials so that these materials better meet any unique needs of local communities.

Also, the states and counties should work more often with local volunteer organizations, especially religious and ethnic organizations, to provide Spanish-language disaster information to the public. Hispanics are more inclined to seek disaster information from

nongovernmental sources and are more likely to rely on social networks rather than the mass media for disaster information. Despite the important role local ethnic and religious organizations can play in helping government officials provide Spanish-language disaster information to the public, the interviews revealed that only a couple of the SEMA communicators work with local religious and ethnic organizations. Likewise, very few of the county emergency management directors work with local religious and ethnic organizations to provide Spanish-language disaster information. Thus, states and counties should reach out more to these groups. These groups also should take the initiative in reaching out to states and counties, especially given how understaffed and underfunded the state and county emergency management agencies are.

In addition, there needs to be some sort of monitoring system to ensure that the Spanish-language information FEMA develops actually is distributed by the states and counties to the public. Such a monitoring system would mitigate the information-asymmetry that exists among the federal, state, and local governments. This monitoring system should not be punitive in nature but rather should establish channels through which open dialogue can occur. FEMA could sponsor national or regional conferences on how best to use their Spanish-language resources to communicate disaster information to Hispanics. At these same conferences, states and counties could provide examples of resources they have created to communicate disaster information to Hispanics. The states also could sponsor similar conferences that would foster information sharing across their state or among multiple states and counties.

On a more practical level, state emergency management agencies need to be better connected to their county emergency management directors. As I already mentioned, the vast

majority of the states in my sample had trouble finding the contact information for their county emergency management directors. Many of the states provided outdated addresses and phone numbers. Most of the states did not have the names of their county emergency management directors. If the states do not have updated and readily available contact information for their county emergency management directors it is obvious that they are not communicating very frequently with these directors. Thus, the state emergency management agencies need to be better connected with their counties in order to better provide the counties with Spanish-language information the states themselves develop.

Similarly, county emergency management directors and state emergency management communicators need to be better connected with government employees from other localities with the same responsibilities. Many of the SEMA communicators I interviewed mentioned they appreciate using materials other states already have developed. These same communicators, however, do not have the resources to identify which states produce materials they would like to use with permission. Since conducting the survey, more than 20 county emergency management directors have contacted me to ask if I can connect them with others who may already produce the Spanish-language materials they would like to provide. Thus, it would be helpful if there were a guide identifying the individuals responsible for producing and providing Spanish-language materials in states and counties as well as in nongovernmental organizations. This guide could be initiated by FEMA online, and interested states and counties could voluntarily post their contact information as well as any Spanish-language materials they are willing to share.

On a theoretical level, this study provides evidence that public sector organizations face challenges when providing Spanish-language disaster information that may not be found in

the private sector. First, public sector organizations operate in a disaster system in which there is no clear channel for providing Spanish-language disaster information to the public. One of the reasons why there is no clear channel is that the system of federalism divides the responsibility for disaster communication among multiple governmental and nongovernmental organizations so that no single organization possesses complete responsibility for disaster communication. This separation of responsibilities allows governmental and nongovernmental organizations to shirk their responsibility of providing Spanish-language disaster information by passing this responsibility on to some other group.

This study revealed that both states and counties are shirking and are likely to continue shirking until the intergovernmental system changes so that a few groups are identified as responsible for developing and providing Spanish-language disaster information. Unfortunately, such a change is not likely to transpire until a major disaster highlights the fact that no one is taking responsibility for providing Spanish-language disaster information. The last time such a major disaster occurred was in 1992 with Hurricane Andrew. After Andrew, governmental and nongovernmental organizations began providing Spanish-language disaster information. More recently, 2005 Hurricane Katrina revealed that Mississippi and Louisiana were not prepared to communicate disaster information in Spanish. However, since these states have very small Hispanic populations, both less than 3% of the total state population, the lack of Spanish-language disaster information did not become a national issue after Katrina. Therefore, since no major disaster has occurred since 1992 to highlight the dearth of Spanish-language disaster information states and counties provide, states and counties have been able to continue shirking.

In addition, public sector organizations are affected by the political ideology of their leaders. This ideology may affect whether public sector organizations provide Spanish-language disaster information. Public sector officials will only be effective in communicating disaster information to Hispanics if they believe providing Spanish-language disaster information is the government's responsibility. Initial evidence indicates that at least some of the county emergency management directors I surveyed do not believe the government is responsible for producing and providing Spanish-language disaster information. Five directors returned uncompleted surveys with comments that they did not believe the government is responsible for communicating disaster information in Spanish. For example, one director wrote on the survey, "This is the United States. English is spoken here. Mexico does not print information in two languages." Another director wrote, "If Hispanics are going to live and work in the USA they should all learn to speak English."

Eight of the directors who completed the telephone survey also mentioned that they thought Hispanics should learn English and the government is not responsible for communicating in Spanish during routine or disaster times. For example, one of these directors said, "This may not be politically correct, but I believe they [Hispanic immigrants] should learn English if they are going to live here." Another director said, "I think they should go back to Mexico if they can't learn English. I'm not responsible for providing disaster information in Spanish." None of the state emergency management communicators I interviewed over the phone expressed similar statements, but this may be because all of the interview participants were public relations practitioners, and thus trained not to make statements that could be perceived as politically incorrect. Also, the telephone survey respondents may have been more likely to mention their opinions on Hispanic immigrants

because I administered the telephone survey while Congress was debating immigration reform.

State and local government officials will take their cue from the federal government on how important it is to produce and provide Spanish-language disaster information. Currently, Congress is debating multiple proposals to reform how the country manages legal and illegal immigration. These proposals have the potential to radically alter how the country treats illegal immigrants, with the most drastic proposal making it a crime to provide government services to illegal immigrants. Depending upon the legislation that Congress passes, developing and providing Spanish-language disaster information may become even more important if more non-English speaking Hispanics are legally allowed to come to work in the United States. Or, if providing government services to illegal immigrants become a crime, government officials may feel justified in not providing Spanish-language disaster information.

On a pedagogical level, this study provides evidence that public relations educators may want to reconsider how they teach crisis communication and public relations writing. Government communicators responsible for disaster communication have to operate in a system where information is not easily shared among levels of government and where officials often shirk their responsibilities to produce and provide disaster information. Corporate communicators responsible for crisis communication likely do not face these same obstacles. Therefore, while teaching crisis communication, educators need to identify constraints and opportunities unique to both the public and private sectors, rather than treating crisis communication as the same for both sectors. Likewise, while teaching public relations writing, educators need to introduce cultural considerations that affect how various



publics respond to information. This study's literature review highlighted that Hispanics' media preferences are different from the preferences of both blacks and whites, and Hispanics respond differently to messages than do blacks and whites. Therefore, while teaching public relations writing, educators need to discuss these differences. Without knowing how diverse publics are likely to respond to various public relations vehicles, students are likely to take a one-size-fits all approach to public relations writing.

Like any public policy issue, the decision to produce and provide Spanish-language disaster information is based upon a set of complicated factors that vary among states and counties. This study provides evidence, however, that developing relationships with multiple governmental and nongovernmental groups helps counties provide Spanish-language disaster information. States and counties do not consistently work with these groups to provide Spanish-language disaster information, and states and counties identify different groups as primarily responsible for producing and providing Spanish-language disaster information. Thus, states and counties are inefficient in providing Spanish-language disaster information because there is no clear chain of responsibility for providing this information to the public. The groups with a stake in producing and providing Spanish-language disaster information need to better communicate with each other. Likewise, at least a few of these groups need to identify themselves as primarily responsible for producing and providing Spanish-language disaster information.

While the United States disaster system has some obvious flaws, as evidenced by the failed federal, state, and local responses to 2005 Hurricane Katrina (Liu, 2006a), the results from the interviews and survey reveal that this system is even more flawed for Spanish-speakers. Emergency managers at all levels of government must take responsibility for communicating

Spanish-language disaster information and learn how to better communicate with this important group. Regardless of the immigration legislation Congress passes, Hispanics will continue to be an important demographic group in the United States that emergency managers cannot ignore.

APPENDIX A: Interview guide

Q1: Tell me a little about your background.

Q2: What are the major disasters or crises here state faces in a given year?

Q3: What are the primary methods you use to communicate disaster information to the public?

Probes: Press releases  
Fact sheets  
Brochures  
Disaster guides  
Coloring books  
Public service announcements  
Video news releases  
Community meetings  
Web site  
Bill boards  
Magnets

Q4: What type, if any, unique communication do you provide for special-needs populations?

Probes: Hispanics  
Other language minorities  
Children  
Elderly  
Disabled

Q5: Do you have a crisis communication plan?

Q6: After a disaster occurs do you evaluate of your communication efforts?

Q7: Tell me about how, if at all, you coordinate with other levels of government communicate disaster information to the public.

Q8: Tell me about how, if at all, you coordinate with non-governmental organizations to communicate disaster information to the public.

APPENDIX B: Survey instrument

## How Counties Communicate Disaster Information to Hispanics

*Background:* This survey should take no longer than **15 minutes** to complete. All answers are confidential. All findings will be reported as aggregate data.

For the purpose of this survey, a disaster:

- Involves the destruction of property, injury or loss of life;
- Is relatively sudden and time-limited;
- Adversely affects a relatively large group of people;
- Is “public” and shared by members of more than one family; and
- Is out of the realm of the ordinary experience.

*In the following questions, check all the types of disaster information that your county provides in English and/or Spanish. N/A indicates your county does not provide that type of information in English or Spanish.*

Information Type	English	Spanish	N/A
1. Brochures			
2. Disaster guides			
3. Radio & TV public service announcements			
4. Newsletters			
5. News releases			
6. Magnets			
7. Activity books for children			
8. Community meetings			
9. Church groups or meetings			
10. Fact sheets			
11. Video news releases			
12. Print advertising			
13. Telephone hotlines			
14. Web page			
15. Billboards			

16. Other information *in English* \_\_\_\_\_ (please specify)

17. Other information *in Spanish* \_\_\_\_\_ (please specify)

***Who do you believe should be responsible for producing disaster information in Spanish? On a scale of 1 to 5, where 1 is low responsibility and 5 is high responsibility, check a single box. N/A indicates the question is not applicable to your county.***

**1= low responsibility      5= high responsibility**  
**N/A= not applicable**

	1	2	3	4	5	N/A
18. FEMA or DHS						
19. Your state emergency management agency or division						
20. Agencies or departments other than emergency management within your state						
21. Your state governor/governor's office						
22. Employees from other county emergency management agencies within your state						
23. Agencies or departments other than emergency management within your county						
24. City mayors within your county/counties						
25. City emergency managers within your state						
26. VOAD excluding local ethnic and religious organizations						
27. Local ethnic organizations						
28. Local religious organizations						
29. Private sector organizations						
30. Other group (please specify)						
31. Other group (please specify)						

*How capable do you believe the following governmental and nongovernmental groups are of producing the highest quality disaster information for Hispanics? On a scale of 1 to 5, where 1 is low capability and 5 is high capability, check one box for each entity listed. N/A indicates the question is not applicable to your county.*

**1= low capability**

**5= high capability**

**N/A= not applicable**

	1	2	3	4	5	N/A
32. FEMA or DHS						
33. Your state emergency management agency or division						
34. Agencies or departments other than emergency management within your state						
35. Your state governor/governor's office						
36. Employees from other county emergency management agencies within your state						
37. Agencies or departments other than emergency management within your county						
38. City mayors within your county/counties						
39. City emergency managers within your state						
40. VOAD excluding local ethnic and religious organizations						
41. Local ethnic organizations						
42. Local religious organizations						
43. Private sector organizations						
44. Other group (please specify)						
45. Other group (please specify)						

***How often does your county work with the following governmental and nongovernmental groups to provide disaster information in Spanish? On a scale of 1 to 5 where 1 is not often and 5 is very often, check a single box in the grid on the left. N/A indicates the question is not applicable to your county.***

***Do you work most with the following governmental and nongovernmental groups before, during, or after disasters? Check all that apply in the grid on the right for each entity listed.***

**1=not often**

**5=very often**

**N/A=not applicable**

	1	2	3	4	5	N/A	before	during	after
46. FEMA or DHS									
47. Your state emergency management agency or division									
48. Agencies or departments other than emergency management within your state									
49. Your state governor/governor's office									
50. Your state legislators									
51. Employees from other county emergency management agencies within your state									
52. Agencies or departments other than emergency management within your county									
53. City mayors within your county/counties									
54. City emergency managers within your state									
55. VOAD excluding local ethnic And religious organizations									
56. Local ethnic organizations									
57. Local religious organizations									
58. Private sector organizations									
59. Other group (please specify)									
60. Other group (please specify)									





**69. What is your budget, excluding salaries, for developing, producing, and distributing disaster information?**

\$ \_\_\_\_\_

**70. Approximately what percentage of this budget is dedicated to developing, producing, and distributing Spanish-language disaster information?**

\_\_\_\_\_ %

**71. What is your ideal budget request for the effective development, production, and distribution of disaster information?**

\$ \_\_\_\_\_

**72. What percentage of your ideal budget request would be used for the effective development, production, and distribution of disaster information in Spanish?**

\_\_\_\_\_ %

**73. How many years have you been in your current position?**

\_\_\_\_\_ years in current position

**74. How many years have you been employed in emergency management?**

\_\_\_\_\_ years employed in emergency management

**75. In addition to county emergency management, please circle other responsibilities you have. Circle N/A (choice 7) if you only work for county emergency management.**

- |                                       |   |
|---------------------------------------|---|
| 1. Fire department/inspection/marshal | 5. Emergency medical services/hospitals |
| 2. Law enforcement                    | 6. Corrections                          |
| 3. Communications/911 dispatch        | 7. N/A                                  |
| 4. County judicial                    |   |
| 8. Other _____                        | (please specify)                        |

**76. Are you a part-time or full-time employee in your current position?**

1. part-time                      2. full-time

**77. In which state is your county located?**

\_\_\_\_\_ state in which your county is located

**78. In which county is your emergency management agency/division located?**

\_\_\_\_\_ county

APPENDIX C: IAEM endorsement letter



January 15, 2006

Dear Colleague:

I would like to encourage you to take the time to complete University of North Carolina's survey on county disaster communication for Hispanics.

This research is very important. The results will be highly instrumental in helping emergency managers at all levels of government better communicate disaster information to Hispanics. Please take the time to complete the survey and look for a summary of the results in a future issue of the *IAEM Bulletin*.

Best regards.

Sincerely,

A handwritten signature in black ink that reads "Elizabeth B. Armstrong". The signature is written in a cursive, flowing style.

Elizabeth B. Armstrong, MAM, CAE  
IAEM Executive Director

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APPENDIX D: Survey pre-notice letter



THE UNIVERSITY OF NORTH CAROLINA  
AT  
CHAPEL HILL

Brooke Fisher Liu, Ph.D. Candidate  
Roy H. Park Fellow and Page Legacy Scholar  
Voice: (919) 593-2388  
Fax: (919) 962-0620

School of Journalism and Mass Communication  
CB 3365 Carroll Hall  
Chapel Hill, NC 27599-3365  
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How Counties Communicate Disaster Information to Hispanics

January 31, 2006

Dear Colleague:

Hurricane Katrina recently reminded us that the emergency management system doesn't always effectively communicate with minorities.

A researcher at the University of North Carolina in collaboration with the International Association of Emergency Managers is conducting a study to examine how counties communicate disaster information to Hispanics. You were selected to participate in this research study because you are a county emergency management director/coordinator in a state with a very large and/or rapidly growing Hispanic population. You are one of approximately 1,500 county emergency management directors/coordinators who have been invited to voluntarily participate in this study.

In a few days, you will receive a survey asking about how your county communicates disaster information to Hispanics and/or works with other organizations to provide disaster information for Hispanics. If your county currently does not communicate disaster information to Hispanics your feedback still is very valuable. Completion of the survey should take no longer than 15 minutes.

You may contact the principal investigator, Brooke Liu, with any questions at (919) 593-2388 or by email (bliu@unc.edu).

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB\_subjects@unc.edu.

I hope you will participate in this study to shape recommendations for communicating disaster information to Hispanics.

Sincerely,

Brooke Liu  
Page Legacy Scholar and Roy H. Park Fellow

APPENDIX E: Survey cover letter



THE UNIVERSITY OF NORTH CAROLINA  
AT  
CHAPEL HILL

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Chapel Hill, NC 27599-3365  
E-mail: bliu@unc.edu

How Counties Communicate Disaster Information to Hispanics

February 7, 2006

Dear Colleague:

A University of North Carolina researcher in collaboration with the International Emergency Managers Association is conducting a study to examine how counties communicate disaster information to Hispanics.

You were selected to participate in this study because you are the county emergency management director/coordinator in a state with a very large and/or rapidly growing Hispanic population. If you think you are not the best person to complete this survey, please pass it along to some one else within your county jurisdiction who could better respond.

To participate in the study you would complete the enclosed questionnaire and return it in the enclosed postage paid envelope. If you prefer to complete the survey online, send an email to bliu@unc.edu. Returning your completed questionnaire or completing the survey online connotes your consent to be a participant in this study.

The survey includes questions about how your county communicates disaster information to Hispanics and/or works with other organizations to provide this information. If your county currently does not communicate disaster information to Hispanics your feedback still is very valuable. It should take **no longer than 15 minutes** to complete the survey. You are free to answer or not answer any particular question.

Your participation is confidential. The only person who will have access to these data is the investigator named on this letter. All findings will be reported as aggregate data. If you would like to receive an executive summary of the survey results, please send an email to bliu@unc.edu or call Brooke Liu at 919-593-2388.

There are neither risks anticipated should you participate in this study nor any anticipated personal benefits from being involved with it. There is no cost to you or financial benefit for your participation. To receive an executive summary of the results, or if you have any questions, please contact the investigator identified in this letter.

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact,

anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB\_subjects@unc.edu.

Thank you for considering participation in this study. I hope I can use your response to help shape recommendations for communicating disaster information to Hispanics.

Sincerely,

Brooke Liu

P.S. Please consider enclosing any materials you use (e.g., brochures, fact sheets, etc.) to communicate disaster information to Hispanics with your survey response in the pre-paid envelope.

APPENDIX F: Survey postcard

How Counties Communicate Disaster Information to Hispanics

February 10, 2006

Dear Colleague:

You recently received a survey sponsored by the International Emergency Managers Association and UNC-Chapel Hill about how counties communicate disaster information to Hispanics.

If you already have completed the survey, thank you very much for your feedback!

If you have not completed the survey, I urge you to do so soon. You can request an online version of the survey by sending an email to [bliu@unc.edu](mailto:bliu@unc.edu)

Please note participation in this study is completely voluntary. I would, however, greatly appreciate your help in shaping recommendations on how to communicate disaster information to Hispanics. If you have any questions, please contact [bliu@unc.edu](mailto:bliu@unc.edu) or call Brooke Liu at 919-593-2388.

Sincerely,

Brooke Liu  
Page Legacy Scholar and Roy H. Park Fellow

Appendix G: Survey Replacement cover letter



THE UNIVERSITY OF NORTH CAROLINA  
AT  
CHAPEL HILL

Brooke Fisher Liu, Ph.D. Candidate  
Roy H. Park Fellow and Page Legacy Scholar  
Voice: (919) 593-2388  
Fax: (919) 962-0620

School of Journalism and Mass Communication  
CB 3365 Carroll Hall  
Chapel Hill, NC 27599-3365  
E-mail: bliu@unc.edu

How Counties Communicate Disaster Information to Hispanics

February 27, 2006

Dear Colleague:

A few weeks ago you received a survey sponsored by the International Emergency Managers Association about how counties communicate disaster information to Hispanics. I recognize you are very busy, but greatly would appreciate your feedback on this important policy issue.

If your county currently does not communicate disaster information to Hispanics your feedback still is very valuable. Completion of the questionnaire should take **no longer than 15 minutes**. You are free to answer or not answer any particular question.

You were selected to participate in this study because you are the county emergency management director/coordinator in a state with a very large and/or rapidly growing Hispanic population. If you think you are not the best person to complete this survey, please pass it along to some one else within your county jurisdiction who could better respond.

To participate in the study you would complete the enclosed questionnaire and return it in the enclosed postage paid envelope. If you prefer to complete the survey online, send an email to bliu@unc.edu. Returning your completed questionnaire or completing the survey online connotes your consent to be a participant in this study.

The survey includes questions about how your county communicates disaster information to Hispanics and/or works with other organizations to provide this information.

If you have any questions about the survey, please contact the investigator identified in this letter. If you have questions or concerns about your rights as a research subject you may contact the Institutional Review Board at 919-966-3113 or by email to IRB\_subjects@unc.edu.

Thank you for considering participation in this study. I hope I can use your response to help shape recommendations for communicating disaster information to Hispanics.

Sincerely,

Brooke Liu

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