

**THE LENS AND LANGUAGE OF POWER: SENSE-MAKING DIFFERENCES IN THE
AFTERMATH OF HURRICANE KATRINA**

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This research examines the relationship between power and the language individuals used to describe Hurricane Katrina and its aftermath. We conceptualize a hierarchy of power amongst the networked group of people involved in the disaster relief effort and demonstrate that power was positively associated with the tendency to describe the situation in terms that were more abstract (vs. concrete), more positive (vs. negative), and, in some cases, more certain (vs. uncertain). We also find that legitimate/reward power, but not expert power, was associated with these effects, and occupying a public role was associated with abstraction and certainty in individuals' descriptions.

Hurricane Katrina hit land on August 29th 2005, leaving many residents of the Gulf Coast of the United States without power, clean water, and adequate food supplies for days. Many people who watched the television coverage of the hurricane and its aftermath probably remember the desperate calls to a reporter from a distressed doctor in New Orleans who was stranded with his patients in a hospital that had no electrical power. Despite the deteriorating condition of the patients and the widespread awareness of their situation, government aid did not arrive for several days (Brinkley, 2006; U.S. Senate, 2006). Unfortunately, this was not an isolated incident. Thus, it was puzzling that, during this same time period, top-level government officials made numerous statements that suggested the government's response was going well. This apparent "disconnect" between how high-level government officials were characterizing the situation in the aftermath of Hurricane Katrina and how victims and first responders were characterizing the same events raises the following questions: Why would individuals in these different positions form such different impressions of the events? And, What factors might account for these different descriptions?

In this paper, we hypothesize that power differences between the various individuals involved with Hurricane Katrina affected how they thought about the events as they unfolded, creating a gap between those at the top of the hierarchy of power and those at the bottom in how they described what was happening. In analyzing the role of power in sense-making in the aftermath of Hurricane Katrina, we seek to build on prior research on issue interpretation and sense-making in organizations, which has found that individuals' interpretations of issues and events are often shaped by characteristics of the roles they occupy (Gephart, 1993; Gioia & Chittipeddi, 1991; Ibarra and Andrews, 1993; Jackson & Dutton, 1988a; Lee, 1993; Maitlis, 2005; Starbuck & Farjoun, 2005; Weick, 1990; 1993). One key characteristic that differentiates

between roles in a social system is the amount and type of power associated with each role (Blau, 1964; Mechanic, 1962). The destruction wrought by Hurricane Katrina exposed differences between individuals who had little, if any, control over their own outcomes (the victims) and people with varying levels of power over those individuals' outcomes (e.g., government officials, aid providers, and military personnel). Thus, the hurricane's aftermath seemed like an appropriate context for studying how individuals with varying degrees of power might differ in how they describe the situations they encounter.

In the case of Hurricane Katrina, a number of people and organizations attempted to work together in a coordinated fashion to anticipate, understand, and respond to the problems that would eventually flood the federal, state, and local disaster prevention and relief capacity. This collaborative, network form of organizing has become increasingly prevalent (Alter & Hage, 1993; Austin, 2000; Brass, Galaskiewicz, Greve, & Tsai, 2004; Powell, 1990), particularly in uncertain environments (Oliver, 1990) and in response to emergent issues in the public sector (Bardach, 1998; Goldsmith & Eggers, 2004; McGuire, 2006; O'Toole, Meier, & Nicholson-Crotty, 2005; Provan & Milward, 1995; Saidel, 1991). Although network organizations differ from traditional organizations in some important respects (Powell, 1990), one similarity is that the interdependent nature of the working relationships create power differences and emergent hierarchical relations both within and across organizational boundaries (Provan, Beyer, & Kruytbosch, 1980; Rodríguez, Langley, Denis, & Béland, 2007; Thacher, 2004). In the response to Hurricane Katrina, the networked and loosely coordinated organization that was responsible for preserving as many lives and as much infrastructure as possible shared many of the features of the traditional pyramid-like structure of hierarchical organizations: there was a small number of federal government officials with a great deal of power at the top, state and local officials and

military personnel in the middle, followed by an array of aid providers and disaster experts with relatively little power, and thousands of victims with no power at all at the bottom. This hierarchy of power, we argue, was important in shaping how the individuals involved in Hurricane Katrina relief and recovery interpreted issues as they arose and made sense of the situation as it unfolded.

THE ROLE OF POWER IN ISSUE INTERPRETATION AND SENSE-MAKING

A key feature of organizational work is that information about emergent issues almost always must be transferred up and down a hierarchy. Those who anticipate, notice, or recognize issues often do not have enough power to address these issues on their own and, thus, must communicate with people who have the resources and power to address them. In turn, those who have control over important resources need to interpret the information being relayed to them and develop solutions that are then implemented by those in the field. Thus, issue interpretation in organizational settings could be characterized as a hierarchically structured, collective effort to make sense of a situation. If people at the top of a hierarchy tend to think about issues in reliably different ways than their counterparts at the bottom of the hierarchy, their descriptions of these issues may be different as well. For example, powerful individuals may tend to see issues in more abstract terms. They may also tend to perceive issues as less threatening than those with less power. These differences in how issues are interpreted are likely to be important in determining what kinds of actions, if any, are taken in response to the issues (Dutton & Duncan, 1987). Thus, it is critical to explore whether there are systematic differences in how situations are interpreted and described by individuals who differ in terms of their power.

Research on the psychology of power has shown that the amount of power that an individual possesses can act as a lens through which information is filtered (Anderson &

Galinsky, 2006; Fiske, 1993; Galinsky, Magee, Inesi, & Gruenfeld, 2006; Guinote, 2007; Magee, Milliken, & Lurie, in press; Overbeck & Park, 2001; Smith & Trope, 2006). That is, powerful individuals appear to interpret the world in very different terms than individuals with little power. In a review of the literature related to the psychological aspects of power, Keltner, Gruenfeld, and Anderson (2003) argue that power differences appear to transform individual psychology, thereby affecting important cognitive processes (see also Kipnis, 1972). In laboratory studies, for example, individuals who are given power have been found to perceive negative situations as less threatening than individuals without power (Keltner et al., 2003). This tendency to view negative situations as less threatening can be explained by the fact that high-power individuals seem to have a heightened sense of control over the negative aspects of situations (Fast, Gruenfeld, Sivanathan, Galinsky, in press). In other laboratory research, individuals in high-power conditions have been found to use high-level, abstract representations of situations while individuals in low-power conditions tend to think in more concrete ways (Smith & Trope, 2006).

Despite these interesting laboratory findings on the effects of power on cognition, there have been few attempts by researchers interested in sense-making and communication in organizations to systematically explore the effects of power on how members interpret and describe issues or events in field settings (for exceptions, see Ibarra & Andrews, 1993 and Magee et al., in press). Thus, one purpose of this paper is to begin to fill this gap in the literature by examining whether differences in power amongst the people responsible for coordinating and delivering relief and between those individuals and the victims of the Hurricane Katrina disaster were associated with differences in the language they used to describe the situation as it was happening.

POWER: DEFINITION AND OPERATIONALIZATION

Consistent with previous research, we conceptualize power as the capacity to influence other people (Astley & Sachdeva, 1984; Dahl, 1957; Hickson, Hinings, Lee, Schneck, & Pennings, 1971; Keltner et al., 2003; Pfeffer & Salancik, 1978). This capacity to influence others can be derived from many sources (Bacharach & Lawler, 1980; French & Raven, 1959; Pfeffer, 1981; Yukl & Falbe, 1991) and is determined by the situation and the social relations within which individuals are embedded (Brass, 1984; Emerson, 1962).

Legitimate Power

One source of power is formal authority, which is derived from one's position and legitimated by policies, rules, and laws (Astley & Sachdeva, 1984; Blau, 1977; Blau & Schoenherr, 1971; Dornbusch & Scott, 1975; Peabody, 1962; Weber, 1947). According to this type of power, which we will call *legitimate power* (French & Raven, 1959), a clear hierarchy emerges among the Hurricane Katrina relief roles. Federal officials had the most legitimate power, followed by state and local government officials. Police, fire, and military personnel also had significant formal authority over victims but little authority over government officials, whereas disaster responders and experts had limited authority even over victims, who had no formal authority at all. Concrete examples of the positions in which authority was vested make these legitimate power differences clear: as the city's mayor, Ray Nagin had the authority to impose martial law on New Orleans (which he did on September 1st), but Michael Brown, as the director of the Federal Emergency Management Agency (FEMA), could veto decisions at the state and local levels (Brinkley, 2006, pp. 368-369).

Reward Power

Another source of power is the ability to control the supply of valuable resources on which others depend (Blau, 1964, 1977; Emerson, 1962; Magee & Galinsky, 2008; Pfeffer & Salancik, 1978; Thibaut & Kelley, 1959). Within organizations involved in the aftermath of Hurricane Katrina, this base of power was positively related to legitimate power because higher-level employees typically had more formal authority and controlled lower-level employees' access to resources. With respect to victims, power in these terms was established principally by who could provide food, water, transportation, financial assistance, and psychological benefits to preserve the victims' health and well-being. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (The Stafford Act) outlines how the federal government could provide critical resources to state and local governments, non-profit organizations, and individuals, primarily via FEMA (42 U.S.C. § 5121 et seq.). Disaster responders and experts, and police, fire, and military personnel all distributed essential resources directly to victims, but government agencies enabled the purchase or delivery of many of the most valuable resources and, thus, had the most power in these terms (Brinkley, 2006; U.S. Senate, 2006). We will call this base of power *reward power* (French & Raven, 1959) because the resources provided by higher-power parties were experienced as positive outcomes by lower-power parties.

Expert Power

In many cases, expertise can also be used as a source of influence, especially when one's knowledge or abilities are highly valued in a situation and when other people are dependent on one's expertise (Finkelstein, 1992). Thus, valuable knowledge and abilities can be described as *expert power* (French & Raven, 1959). During the aftermath of Hurricane Katrina, for example, there were many individuals who had considerable expertise but who had little reward or legitimate power relative to other individuals who were responsible for relief and recovery.

Examples include meteorologists, experts in levee repair, and university professors.

In summary, power during the aftermath of Hurricane Katrina was multifaceted; some people had power because they had formal authority, others because they controlled valued resources, and still others because they had expert knowledge. These bases of power, separately and together, provide an opportunity to explore the relationships between individuals' power and various facets of their sense-making. Considering the bases of power together (the combination of legitimate, reward, and expert power), the overall distribution of power formed a noticeable power hierarchy during the aftermath of Hurricane Katrina. That is, various categories of individuals could be rank ordered in terms of their aggregate level of power (Magee and Galinsky, 2008). Officials in the federal government were at the top of the hierarchy followed by their state and local counterparts. Police, fire, and military personnel were at the next level down, followed by disaster responders and experts, and victims were at the bottom of the hierarchy. This hierarchy can be used to test whether individuals' level of power influenced how they made sense of the situation.

In addition to making predictions based on individuals' aggregate level of power, we try to isolate the specific bases of power that each of the individuals in our sample possessed. This allows us to build theory by exploring which bases of power are associated with sense-making. In the next section, we start by outlining the logic behind our core hypotheses, which use individuals' level of power to predict specific characteristics of their sense-making and then consider which bases of power in particular we expect to be associated with each sense-making characteristic.

HYPOTHESES

Our hypotheses are based on two socio-cognitive theoretical frameworks of how power

transforms individuals psychologically. The first is Construal Level Theory (Trope and Liberman, 2003), which posits that experiencing any form of psychological distance affects how individuals construe, or interpret, their environment (Liberman, Trope, & Stephan, 2007). The experience of psychological distance, which is generated by any feature of the social world that is removed from one's own, direct, current experience, decreases the accessibility of concrete information related to target stimuli (Liberman et al., 2007). With reduced access to concrete information, individuals who are thinking about psychologically distal stimuli use high-level, abstract representations compared to individuals who are thinking about psychologically proximal stimuli, who are more likely to use low-level, concrete representations. Three different forms of psychological distance—temporal, spatial, and social—have been shown to be associated with construal level (Liberman et al., 2007). Important for the current research, we argue that the possession of power increases one's sense of psychological distance (Kipnis, 1972; Liberman et al., 2007; Smith & Trope, 2006). Individuals with greater power are likely to feel a stronger sense of disconnection from others than people with less power (Lee & Tiedens, 2001). Power-holders also are less dependent on other people than are people without power because they have the resources and authority to satisfy their goals on their own or through alternative channels (Emerson, 1962). Thus, people with power have less need to keep in close touch with the experiences of others to achieve their desired outcomes (Fiske, 1993; Galinsky et al., 2006; Gruenfeld, Inesi, Magee, & Galinsky, 2008).

The second theoretical framework that we use is the Approach/Inhibition Theory of Power (Keltner et al., 2003). According to Keltner and colleagues (2003), powerful individuals are likely to experience an environment that is rich in rewards and positive opportunities. By contrast, individuals with little or no power typically experience an environment that offers fewer

rewards and many more situations that might be threatening to their survival. This difference in the environment that surrounds high- versus low-power people is thought to cause power-holders to focus on positive features and to try to “approach,” or take advantage of, opportunities for achievement and gain that are available to them, whereas those without power are more likely to perceive threats and, therefore, to be vigilant in guarding themselves from harm. Individuals with relatively little power are also thought to be more likely to inhibit potentially risky behavior (Keltner et al., 2003).

Level of Power

Both the Approach/Inhibition Theory of Power and Construal Level Theory predict that differences in the level of power between individuals will systematically affect how people make sense of and describe the situations in which they work. The specific characteristics that we predict to vary as a result of individuals’ positions in the Hurricane Katrina power hierarchy are summarized in Figure 1. In the section below, we describe these core hypotheses in detail.

Insert Figure 1 about here

Abstraction. Construal Level Theory (Trope & Liberman, 2003) asserts that a given stimulus or event can be construed or interpreted in different ways. One of the primary dimensions on which construal can vary is the degree to which the representation of the stimulus is abstract (high-level) versus concrete (low-level) (Vallacher & Wegner, 1987). Hurricane Katrina, for example, could be described as “a vicious storm that is wreaking havoc” or “a Level 4 hurricane that is forcing people to climb up to their roofs and wave white towels for help.” The former, high-level construal is a schematic representation characterized by abstract information processing and the extraction of global features that could be applied broadly to all hurricanes. The latter, low-level construal is characterized by attention to the concrete details emerging

specifically from Hurricane Katrina. The experience of greater psychological distance, in any of its forms, is associated with higher-level, more abstract interpretations of stimuli. For example, individuals describe events that happen far away in more abstract terms than events that occur nearby (Fujita, Henderson, Eng, Trope, & Liberman, 2006) because it is a fact of the physical world that people have access to fewer concrete details related to stimuli that are far away than to those that are nearby. Over and above the impact of physical distance, we expect that the possession of power, which we have argued increases social distance, also creates construal level differences (Liberman et al., 2007; Smith & Trope, 2006). Power, we hypothesize, makes its possessors more psychologically disconnected from others (Lee & Tiedens, 2001), which reduces power-holders' access to the detailed information needed to form more concrete interpretations of situations. Thus, according to Construal Level Theory, individuals with power will tend to describe events in more abstract terms than will individuals without power:

Hypothesis 1: In the aftermath of Hurricane Katrina, there was a positive relationship between individuals' level of power and the extent to which the language they used to describe the situation was abstract.

Valence. The Approach/Inhibition Theory of Power predicts that high-power individuals will focus their attention on the potentially rewarding features of situations more than will low-power individuals (Keltner et al., 2003). This prediction has received empirical support from experimental studies, which have shown that greater power is associated with the anticipation of positive outcomes in risky situations (Anderson & Berdahl, 2002; Anderson & Galinsky, 2006; Fast et al., In press). Drawing on Construal Level Theory (Trope & Liberman, 2003), research on the emotional processing of negative events has found that psychological distance between oneself and the event decreases one's experience of negative emotion (Kross, Ayduk, & Mischel,

2005). This result demonstrates that, by distancing people from negative events in the past, elapsed time reduces the accessibility of the negative details related to these events. Similarly, if power created a sense of social distance from the negative effects of Hurricane Katrina's aftermath, we would expect power-holders to have interpreted the events in a more positive (or less negative) light than the powerless. Thus, we predict that, even during times as desperate as Hurricane Katrina, power will be positively associated with the tendency to describe the events in more positive (or less negative) terms:

Hypothesis 2: In the aftermath of Hurricane Katrina, there was a positive relationship between individuals' level of power and the extent to which the language they used to describe the situation was positive.

Certainty. Not surprisingly, having the capacity to influence others appears to be associated with a greater sense of perceived control and certainty. Research in the tradition of the Approach/Inhibition Theory of Power has found that high-power individuals perceive themselves as having more control than low-power individuals and that this translates into greater confidence in predicting the outcomes of events (Anderson & Galinsky, 2006; Fast et al., In press). In addition, the experience of psychological distance tends to increase individuals' confidence in making predictions (Nussbaum, Liberman, & Trope, 2006) because it directs individuals' attention away from specific details that might present potential roadblocks or contingencies for reaching desired outcomes. These lines of reasoning suggest that power will be associated with a high level of confidence or certainty in individuals' descriptions of the events:

Hypothesis 3: In the aftermath of Hurricane Katrina, there was a positive relationship between individuals' level of power and the degree of certainty in the language they used to describe the situation.

Different Bases of Power, Different Predictions

We have noted that power during the aftermath of Hurricane Katrina was multifaceted; some people had legitimate power, others had reward power, and still others had expert power. We suggest further that these bases of power did not all exert the same effects on sense-making during the hurricane's aftermath. Specifically, we argue that legitimate and reward power, but not expert power, will create the psychological dynamics predicted by the Approach/Inhibition Theory and by Construal Level Theory. The logic for each theory is distinct, and we handle each in turn.

For Construal Level Theory, the central issue is whether the base of power creates a sense of social distance for the power-holder (Smith and Trope, 2006). Reward power clearly creates the experience of social distance for power-holders because they are in possession of valued resources and thus are not dependent on relationships with others to acquire those resources. Legitimate power also creates social separation by giving the power-holder authority that is not granted to others. In some instances, such as for the police and military, uniforms symbolize and reinforce this disconnectedness. In other organizational settings, large offices or special parking spots act as symbolic reminders for individuals that they have been judged by others to be important and worthy of special treatment. These aspects of organizations may serve to reinforce a sense of social distance from those who are not judged to merit these rewards.

Predicting the effects of expert power on individuals' descriptive tendencies is not as straightforward. On the one hand, possessing expert power might also create social distance from others; on the other hand, part of what defines an expert is a command over concrete facts and a detailed, nuanced understanding of events within one's domain of expertise. We argue that these two characteristics of expert power—the power of having valuable knowledge, which can

create social distance, and expertise, which is likely to provide a concrete understanding of situations—operated in opposition to each other in the aftermath of Hurricane Katrina. Thus, doctors, researchers, meteorologists, and other experts were probably no more abstract, positive, or certain than non-experts, at least not as a result of social distance.

For the Approach/Inhibition Theory of Power, the primary issue is whether the base of power gives the individual a sense of control over one's own and others' outcomes, which allows power-holders to attend disproportionately to potential rewards relative to threats (Keltner et al., 2003). Both reward and legitimate power give individuals a sense of outcome control. The large differences in incentives for top managers versus employees at the bottom of the hierarchy, for example, may serve to reinforce the heightened attention to rewards amongst those who are very powerful. Those at the bottom of organizational hierarchies are obviously more vulnerable to layoffs than those at the top and, thus, may be more focused on trying to avoid negative outcomes for themselves. A secondary issue is whether the power-holder's control is stable because greater stability in the power structure allows the power-holder to divert attention away from potential threats and toward positive, rewarding aspects of the environment (Keltner et al., 2003). Positions of legitimate power not only tend to be more difficult to challenge but also are more invariant across situations than other sources of power, such as expert power, which is domain specific. Thus, legitimate power provides stability across situations and over time, which is psychologically reinforcing to legitimate power-holders. Although reward and legitimate power might affect approach and inhibition tendencies as we describe above, we argue that expert power provides neither a strong sense of outcome control nor stability.

Based on these lines of reasoning, we expect that legitimate power and reward power are the critical bases of power for our predictions about the effects of power. That is, we predict that

legitimate and reward power, but not expert power, were positively related to individuals' level of abstraction, valence, and certainty in the language that they used to describe the hurricane and its aftermath, similar to our predictions based on level power in Hypotheses 1-3.

Hypothesis 4a: Individuals who possessed legitimate or reward power used more abstract language than individuals without legitimate or reward power.

Hypothesis 4b: Individuals who possessed legitimate or reward power used more positive language than individuals without legitimate or reward power.

Hypothesis 4c: Individuals who possessed legitimate or reward power used more certain language than individuals without legitimate or reward power.

The Motivation to Manage Impressions from Powerful Positions

In the current research, we rely on direct quotations from individuals who experienced the aftermath of Hurricane Katrina to capture how they described the events as they were occurring. We are making the inference that how people talk about a situation is indicative of how they make sense of the situation, an assumption that is consistent with Zajonc and Adelman's (1987) argument that "communication...becomes the transmission of mental contents within one's mind" (p.7). However, because we used four media outlets as the sources of the quotations in our sample, it is possible that the speakers who uttered these quotations could have been aware that what they were saying might be made public. This raises the issue of whether differences in the language used by the speakers in our sample reflect cognitive differences in construal between the more powerful and the less powerful or whether they might reflect a more social difference, namely, that powerful individuals might have been more concerned than powerless individuals with how others were judging what they said.

The conditions in the aftermath of Hurricane Katrina were ripe for power-holders, especially those in publically accountable positions, to be concerned about how others were judging them. Impression management pressures operate to motivate individuals to ensure that their public behavior is consistent with the demands of their roles in particular situations (Goffman, 1959). If they are perceived as responsible for an outcome (Caldwell & O'Reilly, 1982), particularly a negative outcome (Goffman, 1955), people are even more motivated to mitigate damage to their reputations (Leary & Kowalski, 1990). Although the theories of power on which we have based our hypotheses up to this point predict a fundamental cognitive shift in abstraction, valence, and certainty, one could argue that the same pattern of results could also be predicted by a need to manage the impressions that others might form of them. If an individual could be held publically accountable for the situation surrounding Hurricane Katrina, he or she might try a) to direct attention away from the specific details for which he or she could be held responsible, b) to focus on positive aspects emerging from the aftermath, and c) to appear confident and in control. Therefore, we sought to test whether occupying a public role, as opposed to power per se, was associated with abstraction, valence, and certainty in the descriptions of the hurricane's aftermath.

Hypothesis 5a: Individuals in public roles used more abstract language than individuals in non-public roles.

Hypothesis 5b: Individuals in public roles used more positive language than individuals in non-public roles.

Hypothesis 5c: Individuals in public roles used more certain language than individuals in non-public roles.

METHOD

To capture communication differences during a crucial period of the Hurricane Katrina devastation, we analyzed the content of individuals' descriptions of the events during the 10-day span from August 30, 2005, the day after the hurricane hit the Gulf Coast, to September 8, 2005. The descriptions of interest to us were direct quotations produced by people who were involved in the relief and recovery effort. These people included victims and non-victims, who had some level of power and who were organizing and informing the response to the devastation. We drew quotations from four media sources that varied on a number of dimensions (e.g., location, medium) to select a representative sample of what was said in the aftermath of Hurricane Katrina. We then submitted these quotations to a series of quantitative coding procedures to measure our three dependent variables—abstraction, valence, and certainty—as well as relevant control variables.

Media Source Sample

To capture a range of types of media (e.g., local versus national; print versus radio and television) and size and location of the media organizations, we chose four media sources: *The New York Times*, *The Times-Picayune* of New Orleans, *CNN*, and *National Public Radio (NPR)*. We collected transcripts of all programs on CNN and NPR as well as all articles in our two newspaper sources that referred to the phrase “Hurricane Katrina” and were aired or published during our 10-day period; we excluded all editorials and advertisements. Out of these 1,008 transcripts and articles, we selected a proportionate stratified random sample of 55 articles and transcripts (roughly 5 percent), where the strata were media source and day. These transcripts and articles were coded for independent variables, dependent measures, and control variables.

Unit of Analysis

For each article, one coder recorded the media source and date the program aired or article was published. This coder then identified all accounts attributed to individuals who were involved in the response and relief efforts, such as local, state, and federal government officials, police officers, volunteers, hurricane experts, disaster relief personnel, and victims. We removed accounts attributable to groups or organizations. Individual “speakers” were each assigned a unique identifier. We used paragraph markers to distinguish each unit of analysis; thus, we used the reporter’s or transcriber’s decision about where to break up long running accounts into multiple units of speech.¹ These accounts could be a) direct quotations; b) paraphrases, in which the speaker was identified but the verbatim language was not provided (e.g., “St. Tammany Parish President Kevin Davis said there was one storm-related fatality on I-10.”); or c) quotation/paraphrase combinations. We removed paraphrases and the paraphrase portion of quotation/paraphrase combinations so that we only analyzed verbatim accounts (henceforth, quotations). We also removed duplicate quotations appearing in multiple articles/transcripts (selecting the quotation as it appeared in the source that published it first) and quotations for which the entire content was not directly related to Hurricane Katrina (e.g., salutations such as “Good morning”). Finally, we removed quotations that were obviously prepared ($n = 41$) and, thus, probably would not have reflected the speaker’s spontaneous thoughts (e.g., statements made at the start of press conferences). Our dataset was multilevel, with quotations nested within speakers, and we developed a coding strategy to capture important variables at the quotation level and the speaker level.

Independent Variables

¹ We attempted to use “sentence” as the unit of analysis, but we were unable to achieve adequate inter-coder reliability. The coders noted that a paragraph rather than a sentence was typically necessary to interpret the expression of a complete thought.

Speaker power level. Two coders classified each speaker's role at the time the speaker produced the quotation. Inter-coder agreement was excellent (Cohen's $\kappa = .97$), and all disagreements were resolved through discussion. The speaker role categories were as follows: a) victims (30 percent); b) disaster responders, aid providers, volunteers, or disaster experts (30 percent); c) police officers, firefighters, or military personnel (8 percent); d) current officials in local or state government (8 percent); e) current officials in federal government (5 percent); f) former officials in local, state, or federal government (2 percent); g) media/entertainment commentators (e.g., celebrities, pundits) (3 percent); and h) unclassifiable (e.g. unidentified male/female) (13 percent). Due to our interest in power, we excluded categories f), g), and h) from our analyses because, in the context of the disaster, individuals in these categories did not have a systematic capacity to influence individuals in the other categories.

The remaining five categories represented different levels of power based on individuals in those categories having differential formal authority, control over resources, and expertise in responding to the Hurricane Katrina disaster. *Federal officials* had the most power, followed by *state/local officials*. *Police/fire/military personnel* had more power than *disaster responders/experts*, but both of these categories had less power than government officials and more power than *victims*, who had the least power. Although it was not possible to quantify the precise amount or level of power held by individuals in these categories, and there was variation in power across individuals within each category, these categories have face validity in representing different levels of the power hierarchy in the response to Hurricane Katrina. Empirically, we were interested in testing whether individuals' level of power, according to these hierarchically ordered categories, predicted the extent to which their sense-making differed according to the hypotheses above. Speaker power level was coded using the following four

dummy variables: Federal official, State/local official, Police/fire/military personnel, and Responder/expert, with Victim as the reference category.

Speaker bases of power. To capture the speakers' bases of power, the first and third authors coded whether or not each speaker possessed each of three bases: legitimate, reward, and expert (see Appendix for detailed coding guidelines and examples).² We assumed that victims had no bases of power, and they were all coded zero for all three bases. For 23 speakers, both coders were unable to decide whether or not the speaker possessed one or more bases of power, and we omitted these speakers from further analyses. Reliability analyses were conducted only for the remaining sample of non-victim speakers (N = 148). Legitimate power was defined as "formal authority that would have been recognized by others in the situation" (Cohen's $\kappa = .88$), reward power as "control over valuable material or psychological resources and the capacity to reward others with them" (Cohen's $\kappa = .75$), and expert power as possessing "valuable knowledge or expertise" (Cohen's $\kappa = .87$). Disagreements were resolved through discussion, with input from the second author. The bases of power were not mutually exclusive; speakers could have, and often did have, more than one base of power. Thus, we used three dummy variables to indicate speakers' bases of power initially. The final codes revealed that legitimate power and reward power were strongly associated ($\Phi = .59, p < .001$). In fact, only 3 out of 148 speakers had legitimate power without reward power, which suggested that we would not be able to reliably identify the independent effects of legitimate power and reward power. Thus, we created a variable called "Legitimate/Reward Power," which was scored 1 if a speaker had either or both

² Two authors coded the bases of power because we were unable to achieve reliability with coders who did not have academic training in the subject. We also tried to code coercive power, but it could not be inferred reliably for many speakers. Furthermore, when coercive power could be inferred, it was completely overlapping with reward power, consistent with research by Yukl and Falbe (1991).

of these bases of power and 0 if a speaker had neither base of power.³

Speaker public role. Two coders who were blind to our hypotheses indicated whether or not each speaker's role involved interfacing with the public (see Appendix for detailed coding guidelines and examples). This constituted a measure indicating a speaker's concern with trying to manage others' impressions. We assumed that no victims were in a public role, and they were all coded zero. Reliability analyses were conducted only for the sample of non-victim speakers (Cohen's $\kappa = .71$), and disagreements were resolved by the second author.

Dependent Variables

To measure our dependent variables, two raters, who were blind to our hypotheses, coded each of the quotations on 5-point scales representing our three sense-making characteristics: Abstraction, Valence, and Certainty.⁴ The coding scheme, coder instructions, and reliability statistics for the three measures are described in Table 1.⁵ To create our final dependent variables, we averaged across both raters' scores on these three measures.

 Insert Table 1 about here

³ In previous research, Bass (1960) and Yukl and Falbe (1991) have combined legitimate and reward power into one variable called "position power" due to their strong empirical relationship. We chose to retain the bases of power in the name of our variable to keep the elements of the composite variable explicit.

⁴ We also coded each quotation by computer with customized lists of words from the Linguistic Inquiry and Word Count dictionaries (Pennebaker, Francis, and Booth, 2001) and the Harvard IV Psychosociological Dictionary (Harvard IV) (Stone & Kirsch, 1968). Analyses with the computer coded dependent measures mostly corroborated the analyses with the manually coded dependent measures. These analyses are available from the second author upon request.

⁵ Technically, the independent coders used an ordinal metric coding scheme for the dependent measures, and Krippendorff (2003) advocates using an alpha coefficient that can account for variables of different metrics. We computed Krippendorff's alphas for the dependent measures ($.68 < \alpha < .91$), which were not substantively much different from the Cronbach's alphas. We elected to report Cronbach's alpha because it is more widely used and understood.

Control Variables

Topic of quotation. One possible alternative explanation that needed to be ruled out is that individuals at various levels of the power hierarchy were not truly focusing on the same event and that any differences in their quotations might be due to the fact that they were paying attention to different aspects of the disaster. For example, discussion of hurricane damage might have had a temporal orientation toward the past whereas discussion of rebuilding New Orleans might have been oriented toward the future. To rule out this “focus of attention” explanation, two coders classified the topic of each quotation into one of the five following categories: hurricane damage; victim-related issues, including rescue; coordination and resource provision; recovery and rebuilding; or miscellaneous (Cohen’s $\kappa = .75$). The coders resolved disagreements through discussion. For the purposes of analysis, four quotation-level dummy variables were created with “victim-related issues” as the reference topic.

Location of speaker at the time of the quotation. Another possible alternative explanation for our predictions is that speakers in different roles had access to different information because of their geographic location. For example, Federal Officials might have been more abstract in their speech because they were in Washington, DC without access to the detailed information that a responder or victim would have at a disaster site. To rule out this “information access” explanation, two coders used the articles and transcripts to classify the location of each speaker at the time he or she produced the quotation into one of the four following categories: at disaster site, in surrounding region (Far), beyond the surrounding region (Very Far), or unclassifiable (Cohen’s $\kappa = .89$). The coders resolved disagreements through discussion. For the purposes of analysis, we created three quotation-level dummy variables, including one for “unclassifiable”; we assumed that unclassifiable locations would have been roughly evenly distributed across the

other location categories had we been able to identify the true location where the quotation was produced. The reference location was “at disaster site.”

Future orientation of quotation. We measured temporal orientation of the quotation to control for the possibility that speakers who were focused on the future might have been more abstract, positive, and certain than those who were focused on the present or recent past. Initially, we counted the number of words in each quotation that were associated with a future orientation using the Linguistic Inquiry and Word Count (LIWC) software (Pennebaker, Francis, & Booth, 2001). For a majority of quotations, the count of future-oriented words was equal to zero; thus, we transformed future orientation into a binary variable (0,1) representing the absence versus presence of future-oriented words in each quotation.

Length of quotation. The quotations varied in length, and we captured the word count for each quotation using the LIWC software (Pennebaker et al., 2001). The distribution of this variable was positively skewed, so we performed a natural log transformation. We expected, and indeed found, that longer quotations tended to contain more concrete details than did shorter quotations. We included this quotation-level variable in all analyses in case it had any other unexpected effects on our dependent variables.

Verbal ability of speaker. The LIWC software also generated the number of words greater than six letters long (i.e., “big” words) in each quotation. This variable has been used in prior research as a measure of verbal ability, which can determine individuals’ sense-making of situations (Pennebaker & Stone, 2003). We measured big words as a proportion of total words at the speaker level by dividing the sum of big words by the sum of “Length of quotation” across an individual’s quotations.

Gender of speaker. The gender of each speaker was important to include because research

has shown a number of reliable gender differences in language use, including women's tendency to use more words associated with uncertainty (for a review, see Mulac, Bradac, & Gibbons, 2001). Two coders coded whether or not each speaker was female based on information in the transcripts and articles and from internet Boolean searches including the speaker's name and "Hurricane Katrina" (Cohen's $\kappa = 1.00$).

 Insert Table 2 about here

ANALYSES

Our final sample consisted of 847 unique quotations produced by 267 unique speakers. Table 2 contains the descriptive statistics and Pearson correlations for the variables included in the multivariate analyses. To account for non-independence of the quotations within speakers, we analyzed the data using multilevel linear regression models, as recommended by Hofmann, Griffin, and Gavin (2000), with quotations (Level 1) nested within speakers (Level 2). All models included fixed effects for Day and Media source to capture unobserved heterogeneity in the news days and media sources. We also included the log-transformed measure of the length of the quotation (Word count [LN]), the dummy variable for future orientation of the quotation, speaker location dummy variables, the speaker's proportion of big words (Verbal ability), and speaker gender (Female speaker) as control variables in all models.

The first set of models was designed to test the prediction that speakers' level of power predicted the level of abstraction, valence, and certainty of their sense-making (Hypotheses 1-3) and used the speaker power level dummy variables to test for significant differences across categories of speakers (see Table 3). The second set of models was created to try to separate out the effects of legitimate/reward power (Hypotheses 4a-c) and occupying a public role on these

sense-making characteristics (Hypotheses 5a-c). These models used the dummy variables for speakers' legitimate/reward power, expert power, and public role (see Table 4).

 Insert Table 3 about here

 Insert Table 4 about here

RESULTS

Abstraction

The results of Model 1 in Table 3 provide support for Hypothesis 1. All categories of speakers who had some form of power used more abstract language than the victims did. The quotations presented in Table 5, one by a victim and the other by a local government official illustrate this point. There was a trend towards the use of increasingly abstract language with increasing power, although among non-victim speakers, the only statistically significant difference between speaker categories was that federal officials used more abstract language than the disaster responders/experts did. Amongst the control variables, quotation topic and speaker gender influenced the level of abstraction. Quotations that discussed hurricane damage tended to be less abstract, and those that discussed recovery were more abstract, than quotations about victim-related issues. Also, women tended to be less abstract than men. Consistent with Construal Level Theory, future-oriented quotations tended to be more abstract than quotations that did not discuss the future, although this effect was only marginally significant.

 Insert Table 5 about here

Models 1-3 in Table 4 show that, as predicted in Hypotheses 4a and 5a, speakers who had legitimate/reward power and who occupied a public role used more abstract language than did

other speakers. In summary, even after controlling for the speaker's physical distance from the disaster, future orientation and topic of the quotation, legitimate/reward power and the public nature of speakers' positions were positively related to the level of abstraction in the language that the speakers used to talk about Hurricane Katrina and its aftermath.

Valence

The valence model (Model 2) in Table 3 supports Hypothesis 2, which predicted that speakers with more power tended to use more positive language in the aftermath of Hurricane Katrina than did speakers with less power. All categories of speakers who had some form of power were, in fact, less negative than victims in their choice of language. The selected quotations by a high-level federal government official and by a victim in Table 5 illustrate these differences. There were no statistically significant differences, however, between the different categories of speakers who had some power (e.g., non-victims) in the valence of their language. Also, the results for the control variables show that when individuals were focusing on hurricane damage, they were significantly more negative than when they were focusing on other topics.

The results in Table 4, Model 4 suggest that being in a public role was associated with a tendency to use less negative language; however, after accounting for legitimate/reward power and expert power (Models 5-6), the public role coefficient was no longer significant. Thus, there was no support for Hypothesis 5b, or the notion that impression management concerns made people describe situations more positively. Consistent with Hypothesis 4b, however, legitimate/reward power was significantly related to the tendency to be less negative in one's descriptions of the situation. Expert power had no effect on the valence of individuals' descriptions. In summary, after controlling for speaker's physical distance from the disaster, future orientation and topic of the quotation, legitimate/reward power, rather than the motivation

to manage others' impressions, was associated with power-holders' reduced negativity in comparison to victims.

Certainty

Model 3 in Table 3 partially supports Hypothesis 3 by showing that federal and state/local officials tended to use language that reflected greater certainty than the victims did. In Table 5, the quotations by a victim and by a governor, highlight this contrast in certainty. Federal officials were also significantly more certain than disaster responders/experts. In Table 4, there is a marginally significant effect of speakers' public role (see Model 7). Although legitimate/reward power appears to have a significant effect on certainty in Model 8, once speakers' public role was included together with the bases of power (Model 9), only the effect of public role remained marginally significant. Thus, Hypothesis 4c was not supported. Considering the results in Tables 3 and 4 together, government officials expressed more certainty than victims, and, consistent with Hypothesis 5c, people in public roles expressed more certainty than people in non-public roles. These results suggest that impression management motivation was more strongly associated than power with the level of certainty in speakers' language.

DISCUSSION

In this study, we found that individuals involved with Hurricane Katrina and its aftermath described the circumstances surrounding the hurricane in systematically different ways as a function of the amount and type of power they held. Consistent with our hypotheses, we found that people who possessed power tended to describe events in more abstract and more positive terms than the victims. In addition, some of the most powerful speakers expressed more certainty than the victims.

When we conducted a more fine-grained analysis of the data to look at the effects of bases of power, we found that it was the possession of legitimate/reward power that was associated with the tendency to be more abstract and positive in describing the situation in the aftermath of the storm. Experts did not describe the situation any differently than did non-experts. We also found that, controlling for both types of power, occupying a public role tended to be associated with the use of more abstract and certain language in one's descriptions of the events in the aftermath of Hurricane Katrina. These results suggest that accountability pressures may have been associated with a felt need by public officials to deflect attention away from the details of the disaster and to sound confident about the issues they were discussing. Contrary to the logic of impression management, however, occupying a public role was not associated with "spinning" the events in more positive terms.

Our study contributes to the literature on organizational behavior in several ways. First, our findings reinforce the idea that the nature of individuals' roles is likely to affect how they make sense of the situations and issues that they encounter in organizations. Our study suggests that there may be systematic differences in how people construe and communicate about situations in organizations as a function of whether they possess legitimate power or reward power. Given that most, if not all, organizations are characterized by a hierarchy of power (Magee & Galinsky, 2008), this sense-making and communication gap between people who have more power and those who have less is important to understand if we want to build an accurate model of organizations as information processing and problem-solving systems.

A second contribution of our research is to begin to build a bridge between research on organizational cognition and research on the psychology of power, the latter of which has mostly been conducted in the laboratory, by showing some of the specific ways that power-holders

differed from those with less power in the language they used to describe a high consequence, real-world event. In documenting the relationship between power and communication in the aftermath of Hurricane Katrina, our research took two psychological theories—Construal Level Theory and the Approach/Inhibition Theory of Power—and demonstrated their applicability in a rich inter-organizational context. Our study thus extends laboratory-based studies that have provided initial support for the idea that power is a psychologically transformative force. Although we did not find clear support for all of the predictions generated by the two theories, our results were strongly supportive of the core predictions of each one: power was associated with abstraction, as predicted by Construal Level Theory, and with positivity, as predicted by the Approach/Inhibition Theory of Power.

Third, to the extent that individuals feel pressure to interpret crisis events in ways that protect their image, our study highlights how impression management concerns can shape the public sense-making process. Our analysis reveals that people who interface with the public by virtue of the role they occupy, such as leaders and spokespeople, may be likely to try to characterize negative events in an abstract manner and to try to come across as confident about the subject matter they are discussing. These results suggest that when speakers are under pressures of public accountability, sense-making may become intertwined with “sense-giving” (Gioia & Chittipeddi, 1991; Maitlis, 2005; Maitlis & Lawrence, 2007), such that high-level officials and spokespeople who interface with the media become focused on the impact that their words have on others. They may try to shift others’ attention to the “big picture” and create the sense that everything is under control, and in trying to manage the public’s impressions, they also may be influencing their own sense of the situation.

Implications of Our Research

The results of this study have a number of potential implications for understanding the dynamics of power in organizational settings as well as for future research on sense-making. The current study suggests, for example, that leaders are likely to interpret information through a lens of power, tending to interpret the information they receive in an abstract and positive way. On the one hand, these sense-making tendencies may be useful for organizational functioning in some ways. On the other hand, these power-based differences in how events or issues are construed or communicated could be deeply problematic for organizations. In the paragraphs that follow, we explore some of the potentially positive and negative consequences of power-based differences in the construal or interpretation of issues and events in organizations.

In thinking about the roles that people at the top of organizational hierarchies occupy, one could argue that these high-level officials and managers should be thinking in somewhat abstract ways and searching for common features across situations so that they can respond to them with established routines. If managers did not have the capacity to sort events and issues into more abstract categories linked to pre-established routines, then every response of the organization would need to be invented as if each issue or event were unique. It has also been argued that leaders need to create a positive image of the organization to motivate followers to engage in coordinated efforts to achieve organizational goals (Thayer, 1988). Thus, abstract and positive thought and language are clearly useful to managers.

However, given the slow and confused response of government officials in the aftermath of Hurricane Katrina, our results raise the possibility that these same power-related differences in construal can also create problems for leaders in certain types of situations. As leaders attempt to respond to a crisis using a representation of events that is misaligned with the representations

formed in others' minds, a cycle of miscommunication and misunderstanding may develop, which could, over time, cause leaders to lose credibility among their subordinates and followers (Pearson & Clair, 1998). For example, if people feel that their leader is either out of touch with the "reality on the ground" or attempting to foist an idiosyncratic interpretation upon them, their sense of identification with and trust in the leader may decline (Hogg & Terry, 2000). A decline in trust between employees and their leader could decrease or completely curtail the flow of information up the hierarchy. That is, subordinates who feel that their leader's framing of situations is foreign to their own framing are more likely to think that expressing concerns about issues will be futile (Milliken, Morrison, & Hewlin, 2003). Over time, employees could stop speaking up about issues or problems that they encounter at work and could become so alienated from their leaders that they can no longer accept the legitimacy of their leaders' words and actions. They may also try to leave the organization. Alternatively managers who have lost their employees' trust, especially in crisis situations, might be forced to resign (Pearson & Clair, 1998). For example, Michael Brown, the head of FEMA, resigned under pressure after being perceived as out of touch with the needs of the Gulf coast victims in the aftermath of Hurricane Katrina.

A critical area for future research is to investigate the factors that might affect how low-power individuals react to the abstract, confident, and positive language of their leaders. When do these characteristics of language inspire, and when do they alienate? One hypothesis might be that during a crisis, abstract, confident, and positive language may in fact reinforce perceived differences in power that make low-power individuals perceive that their leaders are psychologically distant from them and do not really understand their concerns. During thriving times, or following a period of high performance, however, these same characteristics of

language might be useful in leaders' sense-giving efforts, serving to sustain and even elevate low-power individuals' commitment to their leaders and to the organization as a whole.

Another area for future research would be to explore how the sense-making processes of high-power individuals affect strategic decision-making in organizations. When people are thinking abstractly, they tend to focus on the desirability of an action rather than its feasibility (Liberman & Trope, 1998). A logical extension of our findings that power-holders form abstract and positive representations of information is that power-holders might be at risk of over-estimating the likelihood of successful strategic action because they are likely to neglect the feasibility constraints on a decision and the subsequent difficulties involved in the implementation of that decision. This might be another explanation, in addition to hubris, for why CEOs with a great deal of power tend to pay higher premiums for their acquisitions than do CEOs with less power (Hayward & Hambrick, 1997).

It would also be interesting to explore the effects of this tendency towards abstract construal on the ability of leaders to "switch gears" in their sense-making and sense-giving efforts. For example, it is possible that the tendency of those with a lot of power towards construing issues and events in an abstract way causes them to be slow to respond to the details of emerging situations, especially if the situation is different from what they have encountered previously. In other words, high-power people may be looking to place situations or issues into abstract categories that facilitate the activation of established response routines. This tendency to categorize situations abstractly may cause leaders to be slow to notice features that are out of the ordinary and, thus, slow to adjust their behavior to the demands of a new set of contingencies. If power is, in fact, inversely related to adaptation through its relationship to the tendency to sort events into abstract categories, one implication could be that people who are lower down in an

organizational hierarchy are likely to notice and understand emerging crises and changes in the organization's environment more quickly than those who sit at the top of the hierarchy.

Another key area for future research would be to examine the conditions under which the effects of power on sense-making might be exacerbated or ameliorated. Organizational variables that alter social distance between employees might moderate the effects of power on sense-making. It seems likely, for example, that centralization of decision-making would increase the size of the sense-making gaps between those who have power in an organization and those who do not. In a highly centralized organization, the ability to make decisions and to commit resources is concentrated at the top. This means that these top-level individuals' interpretations of the situation are likely to be critical for what gets done. Top-level officials are likely to have more legitimate and reward power in centralized organizations than in decentralized organizations, and, thus, our research suggests that they are likely have a very strong "lens of power" through which they filter and interpret situations. A highly centralized structure also requires more information to be passed up the hierarchy for a decision to be made than in a decentralized structure. As information is passed through successive layers of power, the chances for information distortion increase (Weick, 1990), as concern about potential threats might be replaced by more upbeat construal. In addition to structure, organizational culture might moderate the effects of power on sense-making and communication. Cultures with egalitarian norms, for example, might be associated with smaller sense-making gaps between how managers and subordinates interpret the work that they do and the environment in which their work takes place.

Limitations of Our Research

Although our method and analytic strategy allow us to make some claims about power,

sense-making, and impression management, our study has some limitations that are worth noting. First, it is possible that journalists used the characteristics of language that we studied to choose quotations that were different for high-power versus low-power people. For example, journalists might have chosen to publish quotations from high-power people that were especially positive while choosing quotations from low-power people that emphasized their negative experience, thus reinforcing our effects. This concern is diminished because the majority of the quotations in the sample were from CNN, which was the most “live” of our four media sources. Thus, most of the quotations were subject to minimal journalistic or editorial selection bias.

Second, and a more significant limitation of our study, is that the cross-sectional design does not allow us to make empirically grounded claims about the causal direction of the relationship between power and sense-making. That is, it might not be the case that the position of power causes these differences but rather that individual differences in sense-making and communication determine who ascends to power. This is an intriguing possibility, and it is important for future research to isolate which causal mechanism is responsible for the relationship between power and sense-making, or whether both processes might be operating. It is theoretically plausible that both processes work in a reciprocal fashion, ultimately reinforcing power hierarchies. Experimental research has shown that power causes abstract thinking (Smith & Trope, 2006), a focus on positive aspects of situations (Anderson & Berdahl, 2002), and greater confidence (Anderson & Galinsky, 2006; Fast et al., In press). These laboratory studies support our argument that power acts as a lens through which people perceive the world. To tease apart the precise causal relationships between power and all of the sense-making characteristics explored here, longitudinal designs could investigate whether people’s sense-making changes as they ascend to or fall from positions with different amounts of power

throughout their career.

A third limitation of our study lies in the possibility that our results may not generalize to other managerial and organizational contexts because the distribution of power in those settings differs significantly from the context of Hurricane Katrina. However, since we studied the effects of power in a loose network of organizations responding to a crisis, our expectation would be that the effects of power on sense-making and communication might actually be stronger if they were studied within a single organizational hierarchy, where power differences are probably more widely understood and legitimated. This reasoning suggests that our study might have involved a setting that reduced the likelihood of obtaining results consistent with our hypotheses, yet our various analyses did in fact reveal important communication differences due to power. Future research on organizational networks characterized by a relative lack of power differences, however, might reveal fewer differences in sense-making between people.

CONCLUSION

The finding that powerful individuals describe the world in very different terms than individuals with little power might not come as a surprise to anyone who has worked in or studied organizations. But that psychological theories of power can parsimoniously explain and predict some of the dimensions on which these differences in sense-making and communication will occur in the context of a large-scale disaster is remarkable. Power, located in formal and informal hierarchical relations, also comes to inhabit the mind. It subtly colors perceptions and interpretations in so many ways that, at least when task roles are not clearly defined as was the case in the aftermath of Hurricane Katrina, effective communication and coordination up and down hierarchy should perhaps be seen as exceptional rather than as expected.

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APPENDIX
Coding Guidelines For Speakers' Bases of Power and Public Role^a

| Variable | Guidelines | Examples |
|-------------------------|---|---|
| <i>Legitimate Power</i> | <ul style="list-style-type: none"> • Occupied a role or title that appears to have given the individual formal authority within an organization or that would have been recognized by others in the situation <ul style="list-style-type: none"> ○ Can be inferred from job title or role | police, upper management level, religious leader, director |
| <i>Reward Power</i> | <ul style="list-style-type: none"> • Controlled valuable material (e.g., financial, human, rescue and recovery supplies) or psychological resources (e.g., therapeutic, spiritual) and the capacity to reward others with them within an organization or between organizations or individuals <ul style="list-style-type: none"> ○ Volunteers are assumed to have reward power unless their quotations indicate that they do not ○ Can be inferred from job title or role | government official, doctor, nurse, therapist, religious leader, police officer, firefighter, management level, aid worker, volunteer |
| <i>Expert Power</i> | <ul style="list-style-type: none"> • Possession of valuable knowledge or expertise <ul style="list-style-type: none"> ○ Managers of specialized or technical staffs are assumed to have expertise ○ Can be inferred from job title or role ○ In cases of ambiguity, web searches were performed to investigate resumé of experience | professor, doctor, nurse, meteorologist, religious leader, rescue specialist, financial analyst |
| <i>Public Role</i> | <ul style="list-style-type: none"> • Representative whose role, in part, is to interface with the public <ul style="list-style-type: none"> ○ In the sample of speakers, there is typically only one public figure per organization (i.e., the leader), although Spokespeople and Communications Directors augment that role for some leaders | spokesperson, religious leader, mayor, governor, president |

^a All variables are binary (0,1) and coded at the speaker level.

TABLE 1
Coding Scheme and Guidelines for Dependent Measures

| Dependent Measures | Guidelines | Scale | Cronbach's α |
|--------------------|--|---|---------------------|
| <i>Abstraction</i> | <ul style="list-style-type: none"> • Abstract is the expression of high-level, conceptual, or global features. • Detailed is the expression of concrete details, minutiae, or numbers. | 1 = Very Detailed 2 = Somewhat Detailed 3 = Equally Detailed/Abstract 4 = Somewhat Abstract 5 = Very Abstract | .86 |
| <i>Valence</i> | <ul style="list-style-type: none"> • Valence reflects the degree of negativity or positivity in tone. | 1 = Very Negative 2 = Somewhat Negative 3 = Equally Negative/Positive 4 = Somewhat Positive 5 = Very Positive | .88 |
| <i>Certainty</i> | <ul style="list-style-type: none"> • Certainty reflects the expression of assuredness or confidence. • Uncertainty is the expression of doubt, hesitation, or having incomplete knowledge. | 1 = Very Uncertain 2 = Somewhat Uncertain 3 = Equally Uncertain/Certain 4 = Somewhat Certain 5 = Very Certain | .76 |

| | | | | | | | | | | | | |
|---------------------------------|-----|-----|------|------|------|------|------|------|-----|-----|-----|---|
| 15. Federal official (0,1) | .16 | .13 | -.03 | .18 | — | | | | | | | |
| 16. State/local official (0,1) | .02 | .07 | -.04 | .11 | -.12 | — | | | | | | |
| 17. Police/fire/military (0,1) | .03 | .02 | -.19 | -.01 | -.15 | -.11 | — | | | | | |
| 18. Disaster resp./expert (0,1) | .04 | .01 | -.12 | .12 | -.29 | -.20 | -.25 | — | | | | |
| 19. Legitimate power (0,1) | .20 | .18 | -.25 | .24 | .43 | .27 | .38 | -.04 | — | | | |
| 20. Reward power (0,1) | .20 | .15 | -.19 | .20 | .35 | .26 | .33 | .16 | .86 | — | | |
| 21. Expert power (0,1) | .05 | .10 | -.30 | .18 | -.04 | -.11 | .37 | .41 | .40 | .43 | — | |
| 22. Public role (0,1) | .18 | .16 | -.18 | .25 | .46 | .26 | .30 | -.12 | .69 | .57 | .13 | — |

^a Correlations greater than $|\cdot07|$ involving at least one Level 1 variable and greater than $|\cdot12|$ involving only Level 2 variables are significant at $p < \cdot05$.

TABLE 3
Multilevel Maximum Likelihood Regression Models Estimating Effects of Speaker Power Category on Sense-Making Characteristics^a

| Independent Variable | Detailed- Abstract Model 1 | Negative- Positive Model 2 | Uncertain- Certain Model 3 |
|---|----------------------------------|----------------------------------|----------------------------------|
| <i>Speaker Power Category^b</i> | | | |
| Federal official | .57*** _a (.15) | .45* _a (.19) | .28* _a (.11) |
| State/local official | .32* _{ab} (.15) | .37* _a (.19) | .23* _{ab} (.11) |
| Police/fire/military personnel | .35* _{ab} (.14) | .35* _a (.17) | .10 _{ab} (.10) |
| Disaster responder/expert | .22* _b (.10) | .36*** _a (.12) | .04 _b (.07) |
| <i>Controls</i> | | | |
| Female speaker | -.19* (.08) | .10 (.10) | -.03 (.06) |
| Verbal ability | -.34 (.44) | -.20 (.53) | .53 [†] (.32) |
| Word count (LN) | -.32*** (.04) | -.09* (.04) | .05 (.03) |
| Future orientation | .12 [†] (.06) | -.02 (.07) | .01 (.05) |
| Coordination topic | -.13 [†] (.08) | .14 (.09) | .01 (.06) |
| Damage topic | -.25* (.12) | -.49*** (.14) | .05 (.09) |
| Recovery topic | .47*** (.12) | .11 (.14) | .12 (.09) |
| Miscellaneous topic | .15 [†] (.08) | .13 (.09) | .13* (.06) |
| Far location | .03 (.12) | .14 (.12) | -.04 (.08) |
| Very far location | .12 (.12) | -.11 (.15) | -.03 (.09) |
| Unknown location | .02 (.12) | -.03 (.15) | -.09 (.09) |
| Constant | 3.38*** (.21) | 2.13*** (.25) | 2.82*** (.15) |
| % variance due to speaker (Level 2) | 17.4% | 27.4% | 15.1% |
| -2 Log Likelihood | 1959.8 | 2175.8 | 1461.7 |

^a $n = 847$ quotations (Level 1) nested within $n = 267$ speakers (Level 2). All models include Day and Media Source fixed effects. Coefficients are restricted maximum likelihood estimates with standard errors in parentheses. Coefficients for Speaker Power Categories with different subscripts within-column are significantly different at $p < .10$.

^b Reference category is Victim.

[†] $p < .10$

* $p \leq .05$

** $p < .01$

*** $p < .001$

Two-tailed tests.

TABLE 4
Summary of Multilevel Maximum Likelihood Regression Models Estimating Effects of Speakers' Public Role and Bases of Power on Sense-Making Characteristics*

| Variable | Detailed-Abstract | | | Negative-Positive | | | Uncertain-Certain | | |
|-----------------------------|-------------------|-----------------|---------------|-------------------|----------------|---------------|-------------------|---------------|---------------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 | Model 9 |
| Public Role | .34*** (.08) | | .25* (.10) | .26* (.10) | | .14 (.12) | .16* (.06) | | .13 [†] (.07) |
| Expert Power | | -.07 (.09) | -.02 (.09) | | -.02 (.11) | .01 (.12) | | -.00 (.07) | .02 (.07) |
| Reward/ Legitimate Power | | .33*** (.09) | .20* (.10) | | .32** (.11) | .24* (.12) | | .14* (.06) | .08 (.07) |
| -2 Log Likelihood | 1954.4 | 1911.7 | 1908.0 | 2176.0 | 2107.1 | 2108.2 | 1456.8 | 1411.0 | 1411.0 |

* $n = 820$ quotations (Level 1) nested within $n = 244$ speakers (Level 2). All models include the same control variables/fixed effects as in Table 3. Coefficients are restricted maximum likelihood estimates with standard errors in parentheses.

[†] $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

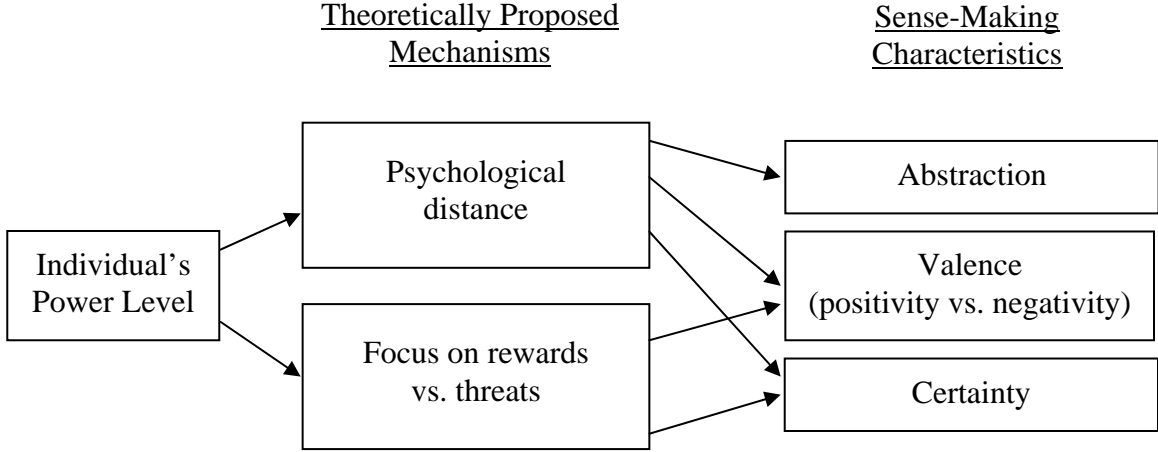
Two-tailed tests.

TABLE 5
Selection of Quotations and Speakers to Illustrate Variance in the Sense-Making Characteristics^a

| Sense-Making Characteristic | Quotation | Speaker |
|-----------------------------|--|--|
| <i>Abstraction</i> | | |
| Detailed | We saw people walking over the bridge. The water was still about 200 yards up Canal Street from the Sheraton. | Victim |
| Abstract | We're working very hard to resolve some of those problems. Unfortunately, it just takes some time. | Local government official |
| <i>Valence</i> | | |
| Negative | This is a nightmare. | Victim |
| Positive | I think the police and law enforcement and the fire and first responders, fire officials have done just a phenomenal job. | High-level federal government official |
| <i>Certainty</i> | | |
| Uncertain | My brother stayed on the beach. I don't know if he's dead or alive. | Victim |
| Certain | I will tell you something. We are going to restore law and order. We will do what it takes to bring law and order to our region. | Governor |

^a These quotations scored greater than 2 standard deviations from the grand mean on the sense-making characteristic that they were selected to illustrate.

FIGURE 1
Theoretical Model of the Proposed Mechanisms through which Power Differences Lead to Sense-Making Differences^a



^a All path relationships are positive.