



Chapter 8

Audience Responses and Informational Needs: Considering Diversity in Crisis Communication

Natural disasters, organizational crises, and acts of terrorism have received increased attention in recent years from communication scholars. A consistent theme emergent in this literature is the diversity of responses to crisis messages. Affected publics hailing from different demographic and economic backgrounds have demonstrated different interests, informational needs, and psychological and behavioral responses to crisis messages. Although this research strongly recommends the consideration of multiple publics and custom tailoring messages to their informational needs, government agencies and crisis practitioners continue to produce generalized crisis messages that do not adequately address these diverse needs. Furthermore, cultural issues that affect message responses have received little attention. The current chapter will review recent crisis communication research exploring differences across race, culture, sex, and socioeconomic status in terms of communication needs and perceptions of message adequacy. Relevant literature includes differences in crisis message effectiveness during September 11, 2001, Hurricane Katrina and other natural disasters, bioterrorism events, and other public crises. This literature is then discussed in terms of its implications for public relations and crisis educators, including ways in which diverse audiences should be considered in this work. Implications of this research for government agencies are also addressed.



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A central concern during any crisis is the need for information. This drive to obtain information is an attempt to reduce uncertainty, and oftentimes dissonance. Uncertainty is a state most people are not comfortable with. As a result, most individuals seek to reduce uncertainty, both in their interpersonal relationships (Berger, 1987) and in their own lives. As Berger and Burgoon (1995) explained, one source of uncertainty is the beliefs individuals have about the world. Crisis events produce uncertainty among individuals creating an uncomfortable state, and information seeking can be seen as an important way of reducing uncertainty, especially about risks and dangers. These drives to obtain information are especially potent when outcomes involved with the uncertain events could be potentially rewarding or harmful (Heath & Gay, 1997). It is even the case in situations where the potential risk is completely uncontrollable (Miller, 1987).

Obtaining information facilitates two sets of remedial processes (Seeger, Sellnow & Ulmer, 2003). One is information will allow individuals to view the way others behave in the given situation. This is the solidarity function of the media (Perse, Nathanson & McLeod, 2002), occurring when the media serve as a bonding function between individuals and society through the reinforcement of social norms. The media also can be used at this time as a means through which tension can be reduced and anxiety that is characteristic of reactions to crisis is eliminated. Through hearing the interpretations of others who have experienced the events, individuals are able to engage in sensemaking. Further research suggests formal leaders may have a central role in helping others understand what to think about the ongoing events (Seeger, Vennette, Ulmer & Sellnow, 2002).

Second, information will facilitate specific remedial responses. An individual's ability to take some action during the crisis brings about a sense of empowerment, thus creating an impression the individual has some control in the situation. This action taken by the individual further contributes to his or her ability to engage in sensemaking. The importance of self-efficacy in crisis messages has been frequently articulated in the literature (Reynolds & Seeger, 2005; Egbert & Parrott, 2001; Witte, Meyer & Martel, 2000). The Centers

for Disease Control and Prevention suggests anxiety can be limited in a crisis through the provision of useful information about the nature and scope of the problem, followed by information about what the public can do (2002).

Historically, the result of crisis response has generally been more negative than positive. The interests of some groups are overlooked in reaction to the crisis, leaving many uninformed about the specifics of the event. As Weick (1993) states, “[T]o sort out a crisis as it unfolds often requires action which subsequently generates the raw material for sense-making and affects the unfolding of the crisis itself” (p. 305). A challenge at this point is to provide messages specific enough to allow individuals to act, while at the same time being flexible enough to address what may be chaotic and uncertain conditions.

Another factor explaining why individuals engage in information-seeking is cognitive dissonance (Festinger, 1957). Festinger’s underlying hypothesis is the existence of dissonance causes an individual to become psychologically uncomfortable. This discomfort will drive the person to attempt to reduce dissonance and achieve consonance. As stated by Festinger, “[n]ew events may happen or new information may become known to a person, creating at least a momentary dissonance with existing knowledge, opinion, or cognition concerning behavior” (1957, p.4). Crisis events, such as September 11, 2001, can be seen as creating dissonance, therefore motivating individuals to seek information. This information helps reaffirm the beliefs they once held, thus eliminating the dissonant state. Mass media can be expected to be the dominant source (Murch, 1971), as the media are generally thought to be a valuable and timely source of information (Heath, Liao & Douglas, 1995).

Culture and Race

Cultural and racial groups respond to mediated risk and crisis communication on the basis of their perceptions and pre-established ways of thinking, and these differ from group to group (Lindell & Perry, 2004). Additionally, how messages are constructed, the channels used, and potential language barriers are critical variables to the effectiveness of crisis and risk communication and information dissemination (Fothergill, Maestas & Darlington, 1999; Perry & Nelson, 1991; Spence, Lachlan & Griffin, 2007a). Issues of race and culture have not been examined as extensively in crisis and risk research as in other areas of mediated communication. Past research has demonstrated racial minorities are typically hit hardest during natural disasters and other cataclysmic events (Baker, 2001; Bolin & Bolton,

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- **Research has demonstrated individuals are more likely to direct information-seeking toward those who possess similar attributes, and it can be reasonably assumed racial minorities will have fewer similar others to target for information and fewer media outlets perceived as similar (Ibarra, 1993, 1995).**

1986; Dash, Peacock & Morrow, 1997; Peacock & Girard, 1997; Williams & Olaniran, 2002). In the United States, crisis and risk messages are often broadcast only in English, leaving many ethnic minorities exposed to the dangers (Aguirre, 1988). For example, nearly a third of the New Orleans' Spanish-speaking residents spoke English "less than very well" (Hilfinger-Messias & Lacy, 2007), raising the question about the need for bi-lingual communication of risks.

In the area of information seeking, research has demonstrated individuals are more likely to direct information seeking toward those who possess similar attributes (Ibarra, 1993, 1995), and it can be reasonably assumed racial minorities will have fewer similar others to target for information and fewer media outlets perceived as similar. Additionally, the notion that racial and ethnic minorities are less likely to accept a risk or warning message as credible without confirmation of the message from others (specifically interpersonal networks) has been established, thus creating a delay in response time (Fothergill, Maestas & Darlington, 1999; Lindell & Perry 2004). After Hurricane Katrina, interpersonal channels were of more importance to minorities than Caucasians (Spence, et al, 2007a), a finding that has several implications for mediated messages.

After Katrina, Caucasians were indicated as perceiving Katrina as more of a hazard than African Americans (Lachlan & Spence, 2007a). This finding suggests the messages received did not adequately produce fright, worry, or alarm. This may be a factor of the lack of minority representation in the media coupled with the need to confirm information within interpersonal networks. Emergency and risk agencies should study the possibility of using interpersonal networks coupled with the media for message diffusion through the African American community. Media outlets should attempt to identify opinion leaders who would have high levels of credibility and work with them to bolster the effectiveness of mediated messages.

Gender

Differences based on gender have emerged in information seeking after crisis events (Seeger, Vennette, Ulmer & Sellnow, 2002). These differences appear to be creating a pattern the media can use to better tailor crisis and risk information. After September 11, 2001, it was found that radio and television were perceived as most useful to women (Spence et al, 2006). This was a surprising finding due to past research, which indicated gender was a systematic predictor of variance in risk information seeking in previous research (Heath & Gay, 1997; Spence, Westerman, Skalski, Seeger, Sellnow & Ulmer, 2006). Specifically, a

study conducted in Israel, which examined information seeking and terrorism (Keinan, Sadeh & Rosen, 2003), indicated men preferred to get their information from visual media (e.g., television) while women prefer non-visual media (e.g., newspapers and radio). Also, previous research has indicated women find television news relatively uninteresting (Jensen, 1988; Morley, 1986), may be less likely to pay attention to it (Konig, Renckstorf & Wester, 1988), and may avoid television news because of its masculine presentation characteristics (Vettehen, Schaap & Schlosser, 2004).

After Hurricane Katrina similar patterns of media use emerged. Specifically, after Katrina, women were more likely to engage in information seeking. They were also more likely than men to place importance on information concerning not only food and water, but evacuation, shelter, rescue efforts, the larger impact of the storm, who else was affected, friends and family, and locating medical care. There appears to be an observed difference in the type of information women seek out in times of crises. Relational and task information in addition to issues of safety are a principle concern. When examining these information needs, it appears to reveal not only do communicators need to appeal to specific perceptions of safety and physical necessities under such circumstances, but they must also address these issues to specific audiences in order to obtain the best results. Given the pattern of results from both Hurricane Katrina and September 11, 2001, risk and crisis messages may be most effective if they are targeted toward women and should include messages focusing on family safety. Current messages, such as Ready.gov, are very general and appear to be undifferentiated in terms of a target audience. The vast body of research that has documented gender differences both in responses to mediated characters of different sexes and differences between men and women in responses to the same messages (Schuck, Schuck, Hallam, Mancini & Wells, 1971; Mosher, 1973; Cantor, Zillmann & Einsiedel, 1978; Jacklin & Maccoby, 1978; Bem, 1981; Messaris & Sarett, 1981; Ross, Anderson & Wisocki, 1982; Burgoon, Dillard & Doran, 1983; Messaris & Kerr, 1983; Morgan, 1987; Desmond, Hirsch, Singer & Singer, 1987; Eagly, 1987; Schmitt, LeClerc & Dube-Rioux, 1988; Signorielli, 1989; Cherny & Weiss, 1996; Perse, Nathanson & McLeod, 1996; Terry & Calvert, 1997) should be applied to areas of safety and physical concerns with many focusing on female audience members. Researchers should therefore first begin to examine the information women want in crisis situations and then the most appropriate medium for reaching them.

Second, with the observed results and the appearance of repeated differences in information seeking, needs, and gender, a program of research should begin to examine how to motivate men to become interested in these necessary areas during a time of crisis. It

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- **Research outlined here suggests that gender should be considered early in the process of crafting crisis-related messages. Future research might examine the kinds of information women want as well as the most appropriate vehicle for reaching them in crisis situations. Findings also indicate messages aimed at men might be more effective if they address emotional outrage first, before examining other issues.**

has been demonstrated males are more likely to experience emotional reactions that will surface in behaviors or behavioral advocacy (Hoffner, Fujioka, Ibrahim & Ye, 2002). Other research (Brody & Hall, 2000) suggests while anger reactions are common among both males and females under extreme duress, males are more likely to channel such stress into outwardly directed hostility. Similar findings were reported in other studies, including Baukus and Strohm (2002) and Greenberg, Hofschire & Lachlan (2002). One suggestion may be to aim messages at men that first address emotional outrage, then examine relational and task issues.

Other findings after Katrina suggest men comprehended instructions from mediated sources better than women, although they indicated lower levels of information seeking (Lachlan & Spence, 2007a). Previous research has demonstrated women have a greater ability than men to send and receive certain forms of nonverbal communication (Briton & Hall, 1995; Burgoon & Dillman, 1995). Women, therefore, may be more strongly affected by lack of or diminished presence of nonverbal cues in particular channels of mediated communication. Women have also demonstrated a better ability in decoding messages than men, are better at understanding and using nonverbal cues (Briton & Hall, 1995; Kette & Konecni, 1995; LaFrance & Henley, 1994), and reported higher levels of satisfaction with face-to-face communication (Knapp & Hall, 1997). Nonverbal cues may therefore play a greater role in communication behaviors of women compared to men. The absence or diminished nature of these cues in mediated messages may impact understanding and satisfaction of messages received by women. As much as women engage in higher levels of information-seeking in crisis situations, they may be less likely than men to understand or be satisfied with information received through mediated sources. Although women have displayed willingness to use more vivid media in times of crisis, it appears comprehension of messages is hurt in these instances. Crisis and risk messages must not only be received but must be understood to be acted upon. Many messages sent over such media are broad in nature and tend to be undifferentiated in terms of a target audience. Future research should therefore begin to examine how to best design messages for women using vivid media.

Several reasons may explain the observed difference in greater information seeking and the tendency for women to translate a relational orientation (i.e., concern for relationships) into a problem-solving orientation (i.e., what information I need to contain the harm to my family). Information-seeking may be a result of both physical and emotional needs. As stated earlier, information helps reduce uncertainty and bring about consonance and

can also meet the immediate needs of safety after a crisis. However, there may also be an emotional component to the consumption of such media.

Previous research in the enjoyment of film tragedy may provide some insight on why this is the case. It has been found consistently across this body of research that sadness reactions to tragic entertainment media are positively related to enjoyment (Oliver, 1993; Oliver, Weaver, Sargent, 2000). Further, this reaction is much stronger for women than men. Results of this research suggest feelings of sadness elicited from viewing sad or tragic media are interpreted as pleasurable sensations among many female viewers. This type of entertainment might most likely be enjoyed among empathic individuals who are responsive to negative portrayals and can interpret sad emotional responses in a positive manner. Further, individuals who tend to identify with or endorse expressive characteristics judged as more typical of females than of males also may find this more enjoyable. In applying the concept to the choice of sad films, it has been suggested viewers' feelings of sadness in response to tragic films may be interpreted as positive or pleasant experiences. That is, viewers may enjoy sad films not necessarily because the films ultimately succeed in evoking positive effect, but because the experience of sadness itself is perceived as gratifying (Oliver, 1993).

These results are not meant to suggest positive interpretations of sadness are the only gratifications viewers may derive from sad films. Nevertheless, this perspective does imply that as tragic media do succeed in arousing feelings of sadness, appraisals of these negative affective experiences themselves (i.e., metaemotions) should play important roles in viewers' enjoyment of, or aversion toward, this type of entertainment. This perspective suggests enjoyment of tragic media should be positively related to sadness responses, insofar as these responses are positively appraised. In other words, being sad is not inherently enjoyable, but being able to look back upon the experience of sadness can lead to enjoyment if one appraises his or her own response as appropriately empathic.

This notion of metaemotion may be one potential explanation of the non-typical results of women reporting television as the preferred medium in crisis events. If the process suggested by Oliver and others carries over into tragic news and crisis messages (in addition to entertainment), then images may arouse feelings of sadness or compassion, and these feelings may translate into positive feelings of self (i.e., "this is a sad event; I have compassion for those hurt, therefore I am a good person"). This is an area ripe for future research. If women continue to have higher levels of information-seeking during times of crisis and also find an element of enjoyment in tragic media, there are important implications for the design of risk and crisis messages.

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- Much of this research suggests a displacement hypothesis, in which younger audiences are less likely to use television and radio because of a greater reliance on interpersonal channels and new media for information.

Age

The impact of age on usefulness of media type has also been investigated. Age is a critical demographic variable that has received attention in the risk and crisis literature (Griffin, Dunwoody & Neuwirth, 1999; Spence, Westerman, Skalski, Seeger, Ulmer, Venette, 2006). Risks may emerge that are more important to particular age groups. For example, older, less mobile populations may be more concerned about evacuation efforts than younger, more mobile audiences. In addition, differences may be expected in how different age groups obtain and rate information (Schafer, Schafer, Bultena & Hoiberg, 1993). Men, those of younger age, and members of smaller households have been found to be less likely to engage in self-protective behaviors than women, older persons, and members of larger households (Schafer et al, 1993).

After September 11, 2001, research suggests younger individuals view print and the Internet as accessible and useful sources of information (Spence et al, 2006). Because both print and the Internet have been found more useful to younger respondents than older ones, it is not plausible to assume this reflects anxiety or lack of familiarity with each medium. Research after Hurricane Katrina found reliance on radio and television increased with age (Spence, Burke, Lachlan & Seeger, 2007b), a finding fairly consistent with past research concerning general patterns of media use. A substantive body of research (see Davis, 1971; Rubin & Rubin, 1982; Condry, 1989; Harris, 1999) has suggested a positive correlation between the variables of age and dependence on media. However, much of this research suggests a displacement hypothesis, in which younger audiences are less likely to use television and radio because of a greater reliance on interpersonal channels and new media for information. With this relatively consistent pattern of media consumption across age during crisis events future research should examine message characteristics and persuasiveness across age and should further attempt to disentangle the relative appeal of television and radio as sources of crisis information for different age groups.

Disability

The communication needs and habits of people with disabilities are another area that has been under-researched. Although there is not a body of past literature examining the crisis information seeking habits of those with disabilities, some studies point to the potential for different information needs. After Hurricane Katrina it was also found respondents with

disabilities were less likely to place importance on information concerning the scope of the damage, government response, rescue operations, the larger impact of the storm, who else was affected, and friends and family when compared to those with typical abilities (Spence et al, 2007b). These results suggest people with disabilities may have a different set of informational needs, and those needs may not have been adequately addressed.

One reason those with disabilities may have different patterns in information seeking is the need for particular services that may be unfamiliar to emergency workers of the general population. Therefore, a person with a disability may be less likely to evacuate based on the belief safety centers cannot provide for specific needs, or they may be unaware of centers which provide such services. Further, some individuals with disabilities receive aid from others via some formal or informal arrangement and may wish to wait before deciding to react to the crisis. Adults with disabilities are twice as likely as typical adults to live alone (Kaye, 1998), thus leading to greater need for assistance. Given the time pressures of a crisis, collaboration of that assistance may be difficult.

With more people now living with disabilities of some kind than ever before (Tierney, Petak & Hahn, 1998), a need has emerged to more closely examine the media use and needs of those with disabilities during crisis events. This provides an area of research in media use during crises that can have an immediate impact in reducing harm and severity of crisis within a particular population.

The Use of New Media

A study by Bracken, Jeffres, Neuendorf, Kopfman & Moulla (2005) examined the use of new media in the context of a crisis, specifically September 11, 2001. They noted the diffusion processes may be altered with the emergence of a changing media environment in the United States. Thus, when a crisis erupts during the business day, mobile telephones may replace interpersonal interactions as people call friends and family to obtain information. This may still constitute an interpersonal channel, but one that is technologically mediated. Further, e-mail and the Internet may also begin to emerge as information sources. New media channels were not found to be more important in news diffusion. That study focused on new media and news diffusion after what is called an exploding crisis event (Kepplinger, Brosius, Staab & Linke, 1989). Such an examination of new media use during a crisis with immediate, noticeable, widespread abnormalities and trigger events produced valuable data; however, not all crises are exploding. In an event such as Hurricane Katrina,

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- In April 2007, two attacks occurred at Virginia Tech University in Blacksburg, Virginia. Some of the first video was recorded by a student on his cell phone (Fox, 2007). It captured police officers reacting to the sound of gunshots, which could be heard coming from Norris Hall. Text messages were used by students to communicate to one another and alert family members of their safety. The shooting at Virginia Tech has encouraged many organizations to examine the potential use of new media as part of their crisis management plan.

the potential danger of the storm was tracked for days, and it was the center of much news coverage. This may have been an opportunity for new media to emerge as viable means of information distribution before the storm, due to the tracking of the potential danger, and after the storm because of the disruption to the local communication infrastructure. Similar to September 11, 2001, new media did not emerge as useful channels (Spence et al, 2007a; 2007b), with consistent results across age, sex, location, disability, and race. However, a more recent crisis provided evidence of the potential usefulness of new media.

In April 2007, two separate attacks occurred two hours apart at Virginia Tech University in Blacksburg, Virginia. Some of the first video covering the shooting was recorded by a student on his cell phone (Fox, 2007). The video captured police officers reacting to the sound of gunshots, which could be heard coming from Norris Hall. Further, text messages were used by students to communicate to one another and alert family members of their safety. The shooting at Virginia Tech has also encouraged many organizations to examine the potential use of new media as part of their crisis management plan.

Consequences of Failing to Consider Audience Diversity

Despite the general non-use of new media across diverse audiences, it is clear that within traditional media differential patterns exist along the lines of race, culture, sex, and age in terms of informational needs, response patterns, and message interpretation during times of crisis. Yet, despite these clear differences across demographics, crisis and risk communication practitioners still rely largely on messages not specifically tailored for different audiences. In particular, they fail to design messages that will appeal to the needs and concerns of those most at risk. By not considering these differences, crisis practitioners open up the risk that initial responses to crisis messages will be unproductive, or at worst, antisocial.

Initial responses to crisis and risk messages in the context of an immediate threat may have potentially positive or negative consequences. Badly constructed messages can lead to responses in which the public is confused and may actually increase potential harm. Peter Sandman and colleagues (Sandman, Weinstein & Hallman, 1998; Sandman, 2003) have posited that crisis messages should both alert and reassure people. They further assert that crisis and risk communication should work to establish a level of public outrage that is manageable and adequately motivates affected audiences, given the level of hazard posed by the crisis. This process is loosely expressed through the formula of

Risk = Hazard + Outrage. Hazard is the technical assessment of risk while outrage is described as the cultural seriousness of a risk (Sandman, Weinstein & Klotz, 1987; Sandman, Weinstein & Hallman, 1998, Lachlan & Spence, 2007a). More specifically, outrage has been conceptualized as how people react to the information received; it is therefore action that is incident-specific and non-routine (Lachlan & Spence, 2007a). This may include both specific behaviors that must be undertaken as well as less tangible factors such as a need for control, responsiveness, and interpersonal trust. If people are outraged due to a lack of information concerning the hazard, they should be further informed of the precise nature and extent of the crisis. If associated hazards are clearly understood, outrage must then be addressed.

Risk messages addressing hazard and outrage must address the public's need for self-efficacy in order to effectively mobilize productive responses, outlining specific behavioral actions that can be taken to reduce potential risk. Messages centering too heavily on susceptibility to risk will instill a needless degree of fear, thus reducing the individual's ability to make rational decisions (Aspinwall, 1999). In more localized crises, risk communication messages should then provide slightly fear-inducing messages inducing a reasonable degree of hazard and outrage; this should motivate people to action and provide information on practical measures that can be taken without inciting negative affective or behavioral responses. Alternately, the miscommunication of hazard and outrage may inhibit individuals from making rational decisions. It should be noted that under this model, risk messages *must* induce some degree of outrage in order to gain audience attention and motivate behavior; the catch is not to induce more outrage than is necessary to accomplish these goals.

If the appropriate messages are followed with specific instructions on behavioral responses, audience members will likely follow this advice. This is critical, as the ability of those affected by a crisis to make reasoned decisions is greatly reduced by the circumstances and threats that may be apparent. Information concerning tangible, behavioral responses will likely lead to a sense of empowerment, creating the impression (rightly or wrongly) that the individual has control over the situation (Seeger et al, 2002).

Take for example a major ecological disaster (such as an earthquake). Crises of this scope can and will create uncertainty and produce fear and will both directly affect people (high hazard) and scare them (high outrage). Messages following this type of event would then have to focus on this outrage, how angry, upset, or frightened people have become and the actions they must take. Induced outrage under these circumstances must be strong

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- **Message primacy is another critical consideration during crises. The first alert message received by the public will set the expectations for subsequent crisis messages (CDC, 2002).**

enough to motivate people to act in a functional manner (such as seeking shelter or supplies), yet ensure that they do not panic, lose their ability to engage in sense-making, or resort to antisocial behavior (such as looting).

Message primacy is another critical consideration during crises. The first alert message received by the public will set the expectations for subsequent crisis messages (CDC, 2002). To minimize negative outrage, initial alerts of a developing crisis should be as accurate as possible, even if accuracy involves conceding there is a large amount of information about the crisis still unknown. Subsequent messages will inevitably be compared to this initial alert and acted upon via these comparisons. Further, behavioral recommendations should be framed in an active, positive manner (CDC, 2002). For example, if people affected by an earthquake are instructed to shelter-in-place, the message should ideally be framed as: “stay in the safety of your home” as opposed to “don’t go outdoors.”

Clearly, issues of hazard and outrage, uncertainty reduction source considerations, and primacy are critical elements in the construction of effective crisis messages. However, these factors may also be the source of message failure if they are not addressed correctly. Further, if crisis practitioners produce messages that are over-generalized, there may be some subpopulations for which crisis messages adequately meet these goals and other subpopulations for which they do not. This may amount to segments of the population who have not received an appropriate amount of information, have not been appropriately informed and motivated in terms of hazard and outrage perceptions, and may not be aware of practical steps in order to avoid negative consequences.

A traceable relationship between race, sex, age, or socioeconomic status and access to appropriate crisis messages may be indicative of a knowledge gap process. The Knowledge Gap hypothesis was first proposed by Tichenor, Donohue, and Olien (1970). Assuming education level to be an indicator of socioeconomic status, the original research across several longitudinal data sets in this area demonstrated differences in terms of the amount of knowledge acquired regarding public affairs. This data revealed that the college-educated acquired more knowledge concerning the NASA lunar program, satellite technology, and the link between smoking and cancer than their less educated contemporaries.

Early research on knowledge gaps also offered evidence of knowledge differences across subpopulations occurring at a static time point. Data concerning knowledge of a newspaper strike (Samuelson, 1960) were offered as evidence of this process; in addition to differences in knowledge across education levels, differences were detected between a community in which the strike had been publicized and one in which it had not. Thus, the

knowledge gap was more visible in communities with a greater degree of media coverage, suggesting those of higher status and education may have more access to media messages related to the event.

Tichenor et al. (1970) further suggest potential mediators in this relationship. They said communication skills are relevant, as those with better reading ability, for example, should be able to comprehend critical information more easily. Furthermore, social contact may be worthy of consideration, as those with interpersonal exposure to issue-relevant information may be able to obtain knowledge regardless of media exposure and comprehension. Selective exposure is also a factor, as opinions and attitudes may make different information sources more or less attractive. Pre-existing knowledge may be an important consideration, as may be the nature of the medium in question, as the degree of intellectual sophistication in news coverage tends to be higher in print media than in electronic media. They point out that all these moderators are likely related to socioeconomic status, and offer those in lower economic strata and members of marginalized groups may have reduced comprehension skills, fewer social contacts with relevant information, be less interested in news, have little pre-existing issue knowledge, and may be less likely to pursue intellectually demanding media.

In the 37 years since the Knowledge Gap hypothesis was originally forwarded, more than 70 studies have produced findings supporting its contention there are differences in issue-relevant knowledge across varying segments of the population, especially with regard to socioeconomic status (Viswaneth & Finnegan, 1996). For the most part, these studies have worked to identify mediating variables in the knowledge gap process, including involvement (Bailey, 1971), motivation (Ettema & Kline, 1977), and level of concern (Lovrich & Pierce, 1984).

Despite the evidence of knowledge gaps occurring across levels of knowledge of public affairs and news, fewer studies have attempted to explore these differences across information concerning crises or public health concerns. In one of the few critical studies in this area, Kahlor, Dunwoody & Griffin (2004) attempted to explain knowledge gap processes related to knowledge of a parasitic infestation of the drinking water supply in Milwaukee, Wisconsin. Based on open-ended survey data, they attempted to examine differences in knowledge concerning the origin of the outbreak and the potential effect on the body when ingested. Their findings generally supported the presence of knowledge gap processes in the context of a crisis, in this case a public health risk. Those of a higher level of education reported more acquisition and understanding of information concerning effects

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- **The Knowledge Gap hypothesis: Assuming education level to be an indicator of socioeconomic status, the original research across several longitudinal data sets in this area demonstrated differences in terms of the amount of knowledge acquired regarding public affairs.**



IMPACT:

- **Almost 90 percent of those displaced by Hurricane Katrina were African American, two-thirds reported living around or below the poverty line, and more than two-thirds were women.**
- **Invisible to crisis practitioners and policy makers, members of underrepresented groups have no choice but to turn to media for crisis information, which may not be produced with their concerns or responses in mind.**
- **The first wave of emergency responders to a crisis should focus on those areas inhabited by underrepresented subpopulations and those most at risk.**

of the parasite than did those with a limited education. Further, high socioeconomic status respondents were more aware of how the parasite got into the water in the first place than those respondents of lower income.

Lachlan, Spence, and Eith (2007) further extended the examination of knowledge gaps associated with crisis messages by considering audience responses to messages surrounding Hurricane Katrina. Their study, taken from a sample of more than 500 displaced refugees in various relocation centers, illustrates differences in crisis knowledge across demographics. Almost 90 percent of the displaced were African American, two-thirds reported living around or below the poverty line, and more than two-thirds were women. When Wilson (1987) spoke of the “underclass,” he was expressly referring to low education, joblessness, and increasing social isolation. Social isolation may grow as poverty diminishes interpersonal contacts across socioeconomic groups, possibly explaining the finding that these subpopulations are less likely to report seeking additional information (Lachlan, Spence & Eith, 2007). When faced with social isolation, the likelihood an individual can obtain information through interpersonal channels or some other non-mediated source is low. Invisible to crisis practitioners and policy makers, members of underrepresented groups have no choice but to turn to media for crisis information, which may in fact not be produced with their concerns or responses in mind. Furthermore, other research has found minorities are less likely to accept the credibility of risk or crisis messages without confirming the information through interpersonal channels (Fothergill et al. 1999; Lindell & Perry 2004).

The authors add that at the point at which a crisis was apparent, African Americans were more likely to seek information concerning food, water, and shelter. They argue African Americans were probably forced to seek this information because it was not provided to them in a timely or accessible manner. They further posit a lack of resources on the part of this subpopulation translated into further isolation and access to mediated crisis messages. They suggest the first wave of emergency responders to a crisis should focus on those areas inhabited by underrepresented subpopulations and those most at risk. Those most in need of assistance and information may be most vulnerable to tangible, negative consequences associated with a crisis.

This study further suggests while Whites and males received crisis messages clearly and reacted accordingly, women and members of minority populations found the messages to be largely unsatisfactory and ineffective. This raises the question of how to improve crisis and risk communication to best suit the needs of all subpopulations that may

be affected by a crisis. At the very least, it seems logical emergency messages must be transmitted through more than one medium using more than one message. It is likely naïve to assume one centralized crisis message will effectively inform, motivate, and calm all possible subpopulations. Yet, crisis communication practitioners continue to rest on this assumption, with little regard for the differences in response across demographics apparent in empirical research.

With crises becoming more severe and more common, it is critical to learn from this body of research. Effective communication practices are a critical element in developing the most effective means of preventing, preparing, and responding to risks and crises. However, when subpopulations are unable to access information, do not understand, or are not adequately motivated by crisis messages, these messages are rendered mostly useless for these groups. The results of these studies are similar to past findings (Gladwin & Peacock, 1997) and suggest that the issues may go beyond message construction and require continued risk campaigns targeting highly specific subpopulations.

Conclusion

Effective mediated communication is a key element in understanding how to most appropriately prevent, prepare, respond to, and learn from risks and crises. As a research community, there is still much to learn about unique and variable communication landscapes associated with race, culture, sex, age, disability, and crisis communication. Future crisis communication efforts should focus on providing information before the triggering of a crisis and educate subpopulations on the best means of acquiring knowledge during a crisis event. This may require placing mediated messages in specifically targeted locations. For example, documented differences exist between Caucasians and African Americans in television viewing habits. African Americans watch more television at 76.8 hours per week compared to the 53.1 hours per week average of Caucasians (Initiative Media, 2003). Furthermore, there are differences in programming preference, as 14 of the top 20 top-ranked programs among African Americans do not score in the top 100 shows watched by Caucasians (Initiative Media, 2003). Similar differences can be seen in programming preference based on gender as morning television is generally targeted toward women, a contention long supported by Neilson audience measurement data. Although the study of media placement will not completely solve these issues, neither will simple implementation of new campaigns without regard to placement.

IMPACT:

- There are differences in programming preference, as 14 of the top 20 top-ranked programs among African-Americans do not score in the top 100 shows watched by Caucasians (Initiative Media, 2003). Similar differences can be seen in programming preference based on gender as morning television is generally targeted toward women, a contention long supported by Neilson audience measurement data.

Outlined in this chapter are several emergent patterns of communication needs and media use during crisis events. The continued study of the specific media preferences and consumption patterns of diverse subpopulations is needed as the majority of crisis research has been directed toward alerting risks and planning for crises. As crises are occurring more frequently and becoming larger in scope and harm, the need for more precise message design and placement is required. It is the hope of the current authors this review will provide a springboard for additional research on better ways to design and implement crisis campaigns with regard to the needs and preferences of diverse subpopulations.

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