
Risk Communication of Terrorist Acts, Natural Disasters, and Criminal Violence: Comparing the Processes of Understanding and Responding

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Risk communication is an important vehicle for the scientific understanding of the perception of and response to various kinds of threats. The present study provides apparently the first empirical attempt to compare perceptions, decision-making, and anticipated action in response to threats of three kinds: natural disaster, violent crime, and terrorism. A total of 258 college undergraduates were surveyed using a vignette-based, $2 \times 2 \times 3$ between-subjects design that systematically manipulated threat imminence (high vs. low), risk level (high vs. low), and nature of the threat (natural disaster vs. crime vs. terrorism). There were substantial differences in participants' perceptions and reported actions in response to natural disaster, relative to the other domains of risk, under conditions of high risk. The risk of natural disaster was more likely to lead participants to report that they would change their daily activities and to relocate. It was also more likely than terrorism to lead to action securing the home. It appears that the mechanisms for perception, decision-making, and action in response to threats cannot be generalized in a straightforward way across these domains of threat. Copyright © 2010 John Wiley & Sons, Ltd.

Assessing the risk of harmful events, and acting to reduce this risk, are both an integral part of contemporary society. Most events resulting in significant harm to people (aside from accidents and self-inflicted injuries) fall into one of three categories: natural disasters (extreme weather events, earthquakes, volcanic eruptions, floods, wildfires, and other events that are not directly triggered by human activity), criminal violence (illegal acts involving physical harm or the threat of physical harm), and terrorism (specific kinds of harm or threats, typically involving multiple victims and motivated by extreme political and/or religious beliefs). Available research across these three areas is inconsistent. There is a substantial scientific literature on the communication of natural disaster risk. Studies on risk communication of criminal violence have helped develop a modest understanding of this domain over the last two decades. By contrast, the empirical investigation of terrorism risk communication, at least in North America, has developed largely since September 11, 2001.

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There have been efforts to review the findings of risk communication across different areas. For instance, Glik (2007) reviewed the research in four areas of risk communication: (a) environmental risk communication, (b) disaster management, (c) health promotion and communication, and (d) media and communication studies. She concluded that despite considerable progress in the incorporation and dissemination of communication principles into public health practice, the field of risk communication still lacks research on the effectiveness of event-specific crisis risk communication efforts. She did not comment on the broad applicability of principles or mechanisms across different kinds of risk communication.

To what extent are risk communication findings from certain domains generalizable to those in others? Such generalizability is important because its presence would: (a) suggest broad human mechanisms of action in understanding responding to risk; and (b) allow the development of theory and empirical foundation of risk communication in new areas by using evidence from other, more established domains. In this article, we first summarize the relevant evidence in the areas of natural disaster, violent crime, and terrorism. Next, we describe the results of a survey designed to assess respondents' perceptions and reported likelihood of responding to risk communication relevant to all three – apparently the first empirical attempt at such integration. Finally, we discuss the implications of these findings for the generalization of empirical findings in one area to questions in the other domains.

RISK OF NATURAL DISASTER

Natural disasters, although relatively infrequent, represent an ongoing risk for many. The International Emergency Disasters Database reported a substantial increase in the number of natural disasters between the periods 1974–1988 (136) and 1989–2003 (370) (Sapir-Guha, Hargitt & Hoyois, 2004). Research has suggested several influences on the capacities to understand and respond to risk communication regarding events such as earthquakes, volcanoes, floods, tornadoes, and hurricanes. The capacities to understand and respond to the risk of natural disasters are influenced in part by the nature of the risk communication message (Broad, Leiserowitz, Weinkle & Steketee, 2007; Glik, 2007). Aspects promoting understanding include: (a) whether the message is clear and specific, (b) who is issuing the warning, (c) the nature of the threat, (d) the specific area threatened, (e) when the event is anticipated, (f) its probability of occurrence, and (g) what protective actions should be taken (Drabek, 1999). Specific, detailed messages are associated with greater perceived risk and likelihood of subsequent response to such information (Glik, 2007). People are more likely to respond to such warnings when they trust and are familiar with the source of the information (Slovic, 1999). The proximity of the threat and the number of warnings influence the perception of risk as well; greater imminence and frequency of warnings are associated with increased likelihood that a person will take precautions (Glik, 2007).

Evacuation is an important response to high risk of impending natural disaster. Previous research has considered models of evacuation decision-making to identify predictors of evacuation; proximity, certainty, and severity of threat were identified as key influences (Riad, Norris, & Ruback, 1999). Conducting interviews with adults who survived hurricanes Hugo and Andrew, these investigators found that 42% of those to whom evacuation was suggested actually did leave. Significant predictors of such

evacuation included prior evacuation, racial/ethnic status (Latino or White), gender (female), and strong social support. (Apparently socioeconomic status (SES) has not been studied, making it difficult to test the possibility that those who fail to evacuate are much more likely to be poor.) The findings on gender and racial/ethnic status differences are consistent with those reported by others (Flynn, Slovic, & Mertz, 1994), who asked Americans (White males, White females, non-White males, and non-White females) to rate levels of risk on 25 hazard items. While women responded as rating greater percentages of “high risk” for every hazard, White males consistently rated hazards lower. Of those who did not evacuate during hurricanes Hugo and Andrew, 33% reported that they did not believe the hurricane was a serious threat (Riad et al., 1999). Not evacuating in spite of a risk may also be influenced by the perceived benefit of staying in one place (Slovic, Fischhoff & Lichtenstein, 1982).

The perception of risk severity is particularly important. The multidimensionality of risk requires that people consider a number of qualities when assessing risk severity. Constructs of risk have been divided into two categories by Slovic (1987): both dread risk (lack of control, inequality in cost and benefit distribution, catastrophic or fatal consequences, and involuntariness) and unknown risk (unknown to science, unobservable, effect of time unknown, and outcome delayed) are highly correlated with perceived risk. Unlike criminal activity or terrorism, natural disasters are often seen as quirks of nature and thus beyond our control (Renn, 2004). This perception may lead people to view criminal activity and terrorism (both synthetic hazards) as higher risk than natural disasters (Miller & Solomon, 2003). Natural disasters are seen as unavoidable and catastrophic, but are also often misjudged (Slovic, 1987). One explanation for such misjudgment is the influence of previous experience. Others may include media influences, irrational fears, and trouble understanding probabilities (Gigerenzer, Gaissmaier, Milcke, Schwartz, & Woloshin, 2009; Gurmankin, Baron, & Armstrong, 2004; Taylor-Goody & Zinn, 2006). The problem is that such misperceptions may lead people to overestimate and underestimate the seriousness of risk and inappropriately respond to such risks.

RISK OF VIOLENT CRIME

The risk of criminal activity differs from the risks of terrorism and natural disasters in frequency and level of impact. Crime is an ongoing activity in most of contemporary society; media coverage of crime is also frequent. However, most victims of criminal violence are single individuals, while terrorism and natural disasters affect larger numbers of individuals in a single event. It is unclear how accurately people estimate their risk of victimization through violent crime. Some (e.g., Warr, 2000) have suggested that individuals will overestimate risk of more serious crimes (e.g., homicide, rape) while underestimating risk of less serious crimes.

Jackson's (2006) “worry about crime model” postulates a feedback mechanism between cognition and emotion when evaluating the risk of crime. An individual will not only assess likelihood and cost (the cognitive component), but also emotional components such as vividness and imagery of a potential criminal act, or previous experience as a victim of crime. Perceptions of likelihood, control, and consequences of a criminal victimization crime are affected by a more subjective evaluation of risk (Jackson, 2004). It appears that cognitive variables such as likelihood and cost are less

influential in “affect-rich” contexts (Rottenstreich & Hsee, 2001). In such contexts, affect may lead to a preoccupation with, and overestimate of, a threat of violence. Hospital staff who have been successfully sued for negligent release are likely to release fewer patients, although litigation does not improve their release decision-making procedures (Poythress & Brodsky, 1992). Such improvement is more likely to be made pre-emptively, through careful policy development and comparison of such policy to the relevant standard of practice (Poythress, 1990).

Image vividness and victimization history are among the factors that may contribute to the affective richness of a particular context. The manner in which a violent crime is presented has also been seen to affect risk assessment when considering the risks associated with hospital discharge for an individual with a history of violent behavior. Monahan *et al.* (2002) and Slovic, Monahan, and MacGregor (2000) reported in separate studies that clinicians were less likely to discharge a patient if that patient’s risk of committing a violent crime was presented in frequency format (e.g., “20 out of 100 patients”) compared with a probability format (e.g., “20% likely”). In addition, Monahan *et al.* observed that the addition of vivid imagery made it somewhat less likely that a decision to discharge would be made. Both studies suggest that vividness and imagery (“seeing” 20 out of 100, as contrasted with 20%) affect perception of the risk of crime and violence in a way that is consistent with Jackson’s (2006) model.

Violence and violent images are commonly occurring aspects of entertainment and news media in contemporary society. The “mean world” hypothesis (Gerbner, Gross, Morgan, & Signorelli, 1986) suggests that the media are influential in exaggerating the risk of criminal violence victimization, even when the likelihood of victimization is low. The media have been criticized not only for emphasizing violent crime, but also for using crime to fill air time when there are few other stories to report (Warr, 2000). In addition, the great majority of citizens appear to use media accounts as their primary source of information about crime. This most likely contributes to linking “two basic social facts” as put forth by Altheide (1997): (1) images related to fear such as crime and violence are prevalent in today’s society, and (2) the public perceives everyday life as dangerous.

RISK OF TERRORISM

Shortly after the terrorist attacks of September 11, 2001, letters containing anthrax were sent through the United States Postal Service. These acts, collectively the most serious terrorism in history on U.S. soil, resulted in a much higher prioritization of the investigation and prevention of domestic terrorism. For present purposes, one important aspect of terrorism risk analysis and management involves quick communication that accurately conveys risk and prescribes indicated responses.

One challenge in risk communication, particularly with terrorism, involves the balance between vigilance and accurate perception of risk (Ropeik & Gray, 2002). Television and radio have traditionally been vehicles for mass communication. Fischhoff (1996) suggests that these are relatively ineffective means of conveying official messages because of the non-uniform manner in which information is circulated. For terrorism risk, in particular, there may be difficulty because of the infrequency of attacks. For instance, media coverage of the anthrax mailings has been criticized for

providing inadequate information regarding who was exposed, how they were exposed, and whether antibiotics prevent anthrax (McComas, 2006).

While the media play an important role in providing information to a large number of people quickly, as well as in shaping public perceptions of risk, individuals are also likely to depend upon the federal government for ongoing information regarding personal and collective risks of terrorism (Vasterman, Yzermans, & Dirkzwager, 2005). In 2002, the Department of Homeland Security implemented the advisory system to “[p]rovide warnings in the form of a set of graduated ‘Threat Conditions’ that would increase as the risk of the threat increases” (<http://www.docstoc.com/docs/784515/Homeland-Security-Presidential-Directives/>). The threat level in a given region may differ from that of the larger nation. Different colors are associated with different threat levels. Red is associated with “severe,” meaning this threat is considered to be highly probable and imminent. Yellow (“elevated”) conveys the importance of remaining vigilant, reporting suspicious activities to authorities, and establishing “an emergency preparedness kit and emergency plan” (<http://www.docstoc.com/docs/784515/Homeland-Security-Presidential-Directives/>). Beyond these recommendations, however, information regarding risk and response is limited.

The limitations of communication for reasons such as lack of information, non-uniform media coverage, or the rarity of terrorist attacks may lead to affect-motivated behavior (Finukane, Alhakami, Slovic, & Johnson, 2000). For instance, during an anthrax contamination in south Florida in 2001 in which one person died, the *New York Times* reported that fear led residents to seek ciprofloxacin (“cipro”) and other antibiotics at high rates (<http://query.nytimes.com/gst/fullpage.html?res=9F00E2DA153FF931A25753C1A9679C8B63>), although ciprofloxacin is not indicated for treatment of anthrax contamination. Glik (2007) emphasized the importance of providing accurate information to the public, but providing such information in an effective way, as the perception of risk is strongly related to how people respond to hazards.

Evidence in each of these areas underscores the relative maturity of the respective area. Natural disaster risk communication is the most mature sub-area, with violent crime a distant second. Risk communication about terrorism is still in an early developmental phase. Accordingly, we conducted a survey to determine whether these different domains of risk communication share common approaches to perception, decision-making, and reported action in response to threat.

METHOD

Participants

Participants included 258 undergraduate students (118 male, 138 female) in introductory psychology classes at a university in Philadelphia, Pennsylvania. The mean age was 19.76 ($SD = 2.79$), with a range of 16–31. The racial/ethnic breakdown included 171 Caucasian, 20 African American, 45 Asian American, seven Hispanic/Latino, one American Indian, and 14 “other” individuals.

Approval was first obtained from the university’s Institutional Review Board (IRB). Students of undergraduate psychology classes were recruited through e-mail, with permission of the course instructors. The e-mail contained a brief overview of the study and indicated that students would receive a small amount of course extra credit for

participating. It assured potential participants that such participation would be voluntary and anonymous. Those students who chose to participate were given directions in the recruitment e-mail, including the link to the online survey. This study was conducted entirely online using an internet-based program used to conduct surveys.

Materials

Demographic Questionnaire

Participants were asked to complete a brief demographic questionnaire prior to completing the risk communication survey. These demographic questions were used to obtain a description of the study's participants including age, gender, year in school, major, and race.

Risk Communication Survey

The survey was designed to measure participants' perceptions toward and reported likelihood of taking action in response to three types of threat: (1) natural disaster (a hurricane), (2) crime (armed youthful offenders), and (3) terrorism (a bioterrorist attack). Using a $2 \times 2 \times 3$ design, we developed 12 versions of the vignettes used in the survey. These vignettes systematically varied threat imminence (high vs. low), risk level (high vs. low probability), and nature of the threat (natural disaster vs. crime vs. terrorism) (see Appendix A). A stratified random sampling procedure was employed so that an approximately equal number of participants received each of the 12 versions.

Each vignette was followed by identical questions, which participants answered after reading the vignette. Responses were made using a five-point Likert scale. The first question concerned respondents' perceptions of the severity of the threat. Subsequent questions elicited respondents' perceptions of their likelihood of taking a specific action in response to the threat; such actions included relocating, securing their house, and changing daily activity. Next, the participants were asked how likely they were to pay attention to and act in response to different methods of risk communication (e.g., an emergency broadcast or an official statement). Finally, the terrorism and criminal act vignettes included two additional questions. These were included to assess how "report suspicious activity" (a common, albeit vague, risk-relevant message used in public facilities and highways in the U.S. since 9/11) is interpreted, and how likely it is that a person will act in response to this message.

Procedure

Participants completed both questionnaires (the demographic questionnaire and the risk communication survey) on the secure website. Software-specific procedures allowed us to employ a double-blind procedure in which neither the researchers nor the participant knew which version of the survey was administered to that participant. Participants provided no identifying information, so there was no link between a participant's identity and the responses to the survey.

RESULTS

Main Analyses

Table 1 presents the means and standard deviations for all dependent variables by type of risk. We used four separate analyses of variances (ANOVAs) to test for differences between threat types (natural disaster, crime, and terrorism) and the following measures: perceived seriousness of risk, likelihood of relocation, likelihood of securing home, and likelihood of changing daily activity (see Figure 1). For significant findings, post-hoc comparisons (Tukey HSD) were used to compare means among the threat types.

Table 1. Mean responses for risk seriousness and perceived reactions by type of risk

	Natural disaster		Criminal act		Terrorism	
	M	SD	M	SD	M	SD
Perceived seriousness of risk ^a	3.96	1.00	4.15	0.69	4.08	0.95
Likelihood of relocating ^b	3.67	1.29	2.33	1.01	2.41	1.17
Likelihood of securing home ^b	3.98	1.06	3.80	1.05	3.49	1.16
Likelihood of changing daily activity ^b	3.53	1.23	3.05	1.15	3.26	1.25

^a1, not at all serious; 2, not serious; 3, somewhat serious; 4, serious; 5, very serious. ^b1, very unlikely; 2, unlikely; 3, possible; 4, likely; 5, very likely.

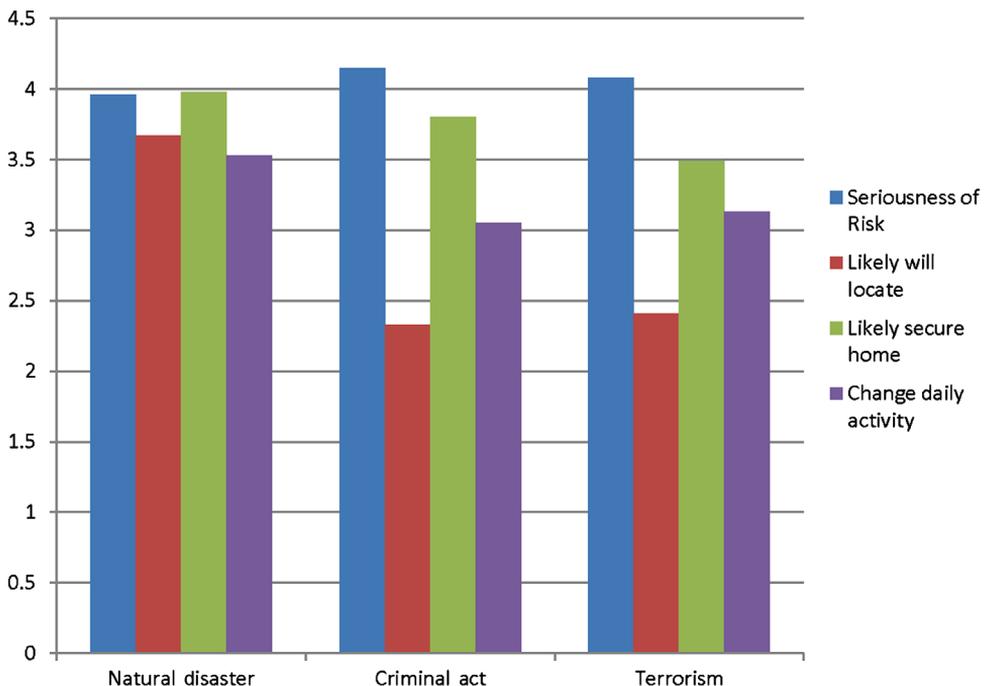


Figure 1. Participants' mean response to risk seriousness and likelihood of action by risk type ($n = 258$).

Table 2. Mean responses for likelihood of relocating,^a by risk type and risk level

	Natural disaster		Criminal act		Terrorism	
	M	SD	M	SD	M	SD
Low probability	3.13	1.32	2.34	1.19	2.32	1.23
High probability	4.23	0.99	2.33	0.84	2.49	1.12

^a1, very unlikely; 2, unlikely; 3, possible; 4, likely; 5, very likely.

Table 3. Mean responses for likelihood of securing home,^a by risk type and imminence of threat

	Natural disaster		Criminal act		Terrorism	
	M	SD	M	SD	M	SD
Low imminence	4.04	1.04	4.03	0.97	3.28	1.18
High imminence	3.91	1.07	3.59	1.09	3.69	1.12

^a1, very unlikely; 2, unlikely; 3, possible; 4, likely; 5, very likely.

For likelihood of changing daily activity, there was a significant main effect for risk type ($F_{(2, 246)} = 3.67, p < 0.05$). The effect size for this interaction was small ($\eta^2 = 0.029$). Tukey post-hoc comparisons of the three groups indicate that likelihood of changing daily activity was rated significantly higher for natural disaster than crime (mean difference = 0.48, $p < 0.05$).

There was a significant two-way interaction between risk type and probability of risk ($F_{(2, 246)} = 6.15, p < 0.01$) for likelihood of relocating. The effect size for this interaction was small to modest ($\eta^2 = 0.048$). Table 2 shows the mean responses for likelihood of relocating at each risk type and probability level. The likelihood of relocating was rated higher for natural disaster than for either crime (mean difference = 1.34, $p < 0.001$) or terrorism (mean difference = 1.27, $p < 0.001$.)

For likelihood of securing home, there was another significant two-way interaction between risk type and imminence of risk with a small effect size ($F_{(2, 246)} = 3.71, p < .05, \eta^2 = 0.029$). Table 3 shows the mean responses for likelihood of securing home at each risk type and imminence level. Respondents were significantly more likely to report securing their homes when faced with natural disaster than terrorism (mean difference = 0.49, $p < 0.01$).

There were no statistically significant differences between terrorism, crime, and natural disaster in terms of the seriousness with which they were perceived.

Additional Analyses

ANOVAs also revealed statistically significant two-way interaction effects for probability and imminence for three of the four dependent measures: perceived seriousness of risk ($F_{(1, 246)} = 13.73, p < 0.001, \eta^2 = 0.053$), likelihood of relocating

($F_{(1, 246)} = 5.87, p < 0.05, \eta^2 = 0.023$), and likelihood of changing daily activity ($F_{(1, 246)} = 5.07, p < 0.05, \eta^2 = 0.02$).

Both of these analyses produced small effect sizes. Risk was perceived as least serious when probability and imminence were low ($M = 3.56, SD = 0.88$), but relatively higher at low probability/high imminence ($M = 4.05, SD = 0.94$), high probability/low imminence ($M = 4.45, SD = 0.64$), and high probability/high imminence ($M = 4.16, SD = 0.88$). Participants indicated that they would be least likely to relocate when probability and imminence were low ($M = 2.45, SD = 1.20$), and relatively more likely to relocate at low probability/high imminence ($M = 2.80, SD = 1.39$), high probability/low imminence ($M = 3.14, SD = 1.25$), and high probability/high imminence ($M = 2.99, SD = 1.36$). This pattern was also observed in participants' report of their likelihood of changing their daily activity. Low probability/low imminence were associated with the lowest likelihood of changing daily activities ($M = 2.94, SD = 1.29$). Low probability/high imminence ($M = 3.33, SD = 1.27$), high probability/low imminence ($M = 3.57, SD = 1.21$), and high probability/high imminence ($M = 3.30, SD = 1.08$) all showed relatively higher ratings of the likelihood of changing such daily activities.

Finally, there was a main effect for probability (but no interaction between probability and imminence) on participants' reports of the likelihood of securing their homes. Participants were more likely to secure their home when probability was high ($M = 3.93, SD = 1.03$) than when it was low ($M = 3.57, SD = 1.16$).

DISCUSSION

This study was apparently the first to provide empirical evidence directly comparing perceptions of risk associated with three different threats: natural disaster, crime, and terrorism. Such a comparison is important to help gauge whether individuals process information related to disparate threats in a similar fashion, or whether the distinct features of each of these threats is associated with perceptions and decisions that are substantially different from threats in different domains. In addition to the scientific value associated with such enhanced understanding, there are significant applied implications to these results. If investigators could incorporate the findings of a relatively mature area of risk communication, such as natural disaster, into our awareness of important indications for the newer area of terrorism, this could save a great deal of time and independent scientific study.

The present results do not indicate that this will be feasible, at least in a straightforward fashion. Indeed, these findings suggest some fairly substantial differences in how these differing threats are perceived, with different decisions regarding action. Participants perceived all three forms of threat to be serious, but not significantly more so than the others. Nevertheless, the risk of natural disaster had different implications for participants than did the other forms of risk. Natural disaster was more likely to lead participants to report that they would change their daily activities than was the risk of crime. Natural disaster risk was also more likely than either of the other two risks to result in a decision to relocate. In addition, it was more likely than terrorism to lead to action securing the home. All of these differences were observed

under conditions of high risk. When probability or imminence of harm was low, however, participants rated themselves as less likely to change their location or activities.

These findings suggest that natural disaster threats may have a salience and potency not associated with either crime or terrorism. There could be several reasons for this. Severe weather events are often highly destructive, and can be witnessed immediately by millions through modern internet and telecommunication technologies. Individuals may be more likely to have personal experience with natural disasters. They may thus be more vivid, which has been associated with perception of threat severity and harm (Finucan *et al.*, 2000; Slovic, Finucane, Peters & MacGregor, 2004). Weather risk communication has an appealing simplicity and clear implications for action as well. Observers can be advised to consider a threat on three levels: (1) no immediate threat, (2) be attentive to possible threat (watch), and (3) be notified of imminent threat (warning) (Monahan & Steadman, 1996). Many severe weather events, of course, have certain characteristics that terrorism and crime do not—most notably, the use of satellite and radar technology to “show” the path of an approaching storm and describe its severity. Moreover, severe weather events are time-limited, demanding attention and action over a relative short period of time and having the conclusion of the threat clearly documented.

It is important to further investigate how these different threats are perceived, and the actions reportedly associated with each. Direct application of risk communication results across these three domains does not seem warranted at present. However, as further research delineates both common and distinct mechanisms of perception and response to different threats, it may be that some research findings are generalizable across different forms of threat. Such research might incorporate personal experience, SES, the role of affect (Jackson, 2006) and the features of vividness and limited duration in helping to clarify why natural disasters are perceived differently.

There are several important limitations associated with the present study. It is apparently the first direct comparison between responses to threats in these different domains. As with any initial finding, it needs replication by other investigators. Second, it uses vignettes and self-reported likelihood of responses to the conditions presented in the vignettes. There may be a substantial difference between what people report they will do in response to the threat of natural disaster, crime, or terrorism and what they actually do. Hence, although the research approach involving self-reported likelihood in response to vignettes is useful, it may have limited ecological validity. It also differs from research investigating other indicators of threat response (e.g., physiological or behavioral measures) and using different threat stimuli (e.g., audio or video rather than written depiction). These other approaches are needed as well. Third, the participants in this study were college undergraduates. They may differ in important respects from others who are older, who have their own children, and who own their own property. Further replication with different participant cohorts should help to address this limitation.

The present findings do suggest that this approach to risk communication can expand our knowledge of how people respond to different kinds of threats. Communicating such threats accurately and in a way that promotes adaptive responding is a high priority for both investigators and risk managers. Further research in this area has the potential both to increase our scientific understanding and to promote the safety of those living in our society.

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APPENDIX A: RISK COMMUNICATION VIGNETTES

Natural Disaster

1. *Low probability, low imminence, low severity.* You are at home watching the local news when a reporter states that there is a 10% chance that your area will be affected by a developing hurricane. The reporter explains that the hurricane may hit your city sometime within the next 6 days. Experts are predicting that the storm will be a tropical storm at the time it hits your town, so injuries to people would be minimal.
2. *High probability, high imminence, high severity.* You are at home watching the local news when a reporter states that there is a 90% chance that your area will be affected by an approaching hurricane. The reporter explains that the hurricane may hit your city sometime within the next 6 hours. Experts are predicting that the storm will be a category 5 hurricane at the time it hits your town, so injuries to people would be severe and probably include some deaths.

Criminal Acts

1. *Low probability, low imminence, low severity.* You are at home watching the local news when a reporter states that a group of local teenagers has again been seen throwing snowballs at motorists who are stopped at traffic lights in the local area. Experts have predicted that there is a 10% likelihood that this group will do this again within the next month. Based on the results of previous incidents, the harm to motorists could involve irritation and feeling threatened.
2. *High probability, high imminence, high severity.* You are at home watching the local news when a reporter states that a group of local teenagers has again been seen dropping large chunks of ice off the overpass of a local highway toward cars driving beneath the overpass. Experts have predicted that there is a 90% likelihood that this group will do this again within the next day. Based on the results of previous incidents, the harm to motorists could involve being badly injured or killed from being hit with the ice or involved in an accident triggered by the ice chunk, and feeling very frightened.

Terrorism

1. *Low probability, low imminence, low severity.* You are at home watching the local news when a reporter states that a well known terrorist organization has made a threat to demonstrate their power by infecting the water supply with a chemical that induces mild feelings of nausea in those who drink the infected water. Experts predict that there is a 10% likelihood that the terrorist organization will carry out this threat

within the next 6 months. If this organization succeeds in carrying out this threat, the resulting harm is expected to be minimal.

2. *High probability, high imminence, high severity.* You are at home watching the local news when a reporter states that a well known terrorist organization has made a threat to demonstrate their power by infecting the water supply with a chemical that makes those who drink the infected water very sick, and may be fatal. Experts predict that there is a 90% likelihood that the terrorist organization will carry out this threat within the next day. If this organization succeeds in carrying out this threat, the resulting harm is expected to be severe and, in some cases, fatal.