Risk Perception and Terrorism: Applying the Psychometric Paradigm

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THE PSYCHOLOGICAL NATURE OF RISK

Suppose for a moment that the New York Port Authority receives a threat of a radioactive "dirty bomb" to be detonated on a container ship in the Port of New York. Lower Manhattan is evacuated, and most of the other five boroughs' residents also choose to leave. Business grinds to a halt as both consumers and workers take cover. Within thirty-six hours, the Department of Homeland Security (DHS) announces that the threat has passed. However, many residents wait several more days before returning, while others do not return at all. Business continues to wane as tourism stalls and factories and shops close down. It will be several months before the city fully recovers. This illustration demonstrates the importance of perceived risk regarding terrorism. The perception of risk – whether or not risk is actually present – is sufficient to cause real and long-term damages. Understanding how specific factors drive the perception of risk is essential to understanding how people will respond to threats of terrorism.

There are many benefits to the empirical study of risk perception among the general populace. This research provides a better understanding of how risk perception influences political attitudes; it provides insight into how risk perception impacts various behaviors; it allows the mapping of social processes such as risk amplification and attenuation; it informs the development of effective communication and education programs; and it is useful for identifying which situational factors contribute to perceived risk. Each of these benefits will be discussed in turn, along with an examination of previous contributions in this field and explanations of how they inform homeland security research and policy.

The concept of risk is a psychological one. Risk, as opposed to danger, is a socially constructed phenomenon.[1] Riskiness is based on perception rather than fact, and this perception is based on qualitative, not quantitative characteristics of the hazard being considered.[2] Paul Slovic argues that risks are made up of qualitative attributes like voluntariness or probability. He further posits that no single attribute defines the risk of a particular hazard; neither are specific attributes equally influential across different hazards.[3] Even when the facts and probabilities of a particular hazard are well defined and well known, human judgment is required to determine which information is most important to defining the risk of that hazard. A study by Slovic and others found that participants' ratings of risk did not match their own mortality estimates, indicating that factors other than death toll must be related to risk decisions.[4] Whether a risk is considered acceptable is also a matter of priorities and values, which are psychological by definition.[5] The subjective and perceptual nature of risk makes it an important area of study for the psychological sciences.

Perhaps the best illustration of the subjective nature of risk is the discrepancy between expert and lay evaluations of a hazard. When judging the risk of a hazard, experts rely much more heavily on mortality estimates and probabilities than do

laypersons. Slovic and his associates reported that expert judgments of risk corresponded to objective statistical data, whereas layperson judgments did not.[6] Slovic explained such a discrepancy by concluding that experts view risk as the likelihood of actual harm based on mortality estimates, whereas lay perceptions of risk are based on a number of qualitative (and subjective) characteristics.[7] Some of the characteristics linked to lay perceptions of risk include the voluntariness of exposure, the dread associated with the hazard, the extent to which the risk can be controlled, the potential for catastrophe, the level of uncertainty associated with the hazard, and the perceived inequality of risk/benefit distribution.[8] It is well-documented that expert and lay judgments of risk are different; this difference can be traced to qualitative dimensions of risk that are applied to lay judgments, but not to expert judgments. The inconsistency between expert and lay judgments of risk demonstrates the psychological nature of risk.

This inconsistency also creates a debate about the appropriateness of using expert evaluations alone for policy decisions. In most cases, government and business policy makers rely almost exclusively on quantitative risk assessment to guide policies. In many cases the involved public fails to accept such assessment. One example is nuclear power generation, which has been largely rejected in this country even though it is both safer and cleaner than fossil fuel alternatives. Another example is the decrease of property values near toxic waste sites, despite repeated assurances that the materials have not and will not impact local residents. Participants in a study conducted by Donald MacGregor and Paul Slovic considered the standard cost-benefit analysis used by experts to be morally insufficient for evaluating and regulating risk, but acceptable as part of a more subjective evaluation process.[9] Abraham Wandersman and William Hallman agreed that such analysis was insufficient for a number of reasons. First, quantitative risk assessments are based on a number of assumptions that introduce uncertainty into the process; second, the credibility of the risk assessors may be suspect; and third, expert assessment often fails to consider issues that are important to the public interest.[10] The unwillingness of the public to accept expert risk assessment is a further demonstration of the psychological nature of risk.

In summary, the concept of risk is socially constructed and psychologically oriented. Comparisons of expert and lay judgments of risk illustrate that public assessments of risk are tied to qualitative, rather than quantitative, characteristics of a hazard. The relative importance of these qualitative characteristics varies across people or across hazards. Risk perception research techniques can identify which characteristics are important and when. The question of using only expert judgments for policy decisions involving risk is especially salient in the area of terrorism. The Department of Homeland Security is engaged in various projects designed to objectively assess risk. Whether such assessments will be adequate to provide public support for policy decisions is far from certain.

By itself, keeping people safe is not sufficient: they must also feel safe. The importance of this point in implementing homeland security and emergency preparedness programs is difficult to overstate. Without a perception of safety, voters will locate and authorize new leaders (both local and federal) who share their priorities, and will implement a more "acceptable" security policy. Such a potential action is not just a political threat; it can have a serious negative impact on legitimate programs that are effectively reducing risk, and divert money to programs that increase the feeling of safety without increasing actual safety. The answer, from the standpoint of authorities

attempting to minimize risk and maximize recovery, is to find a middle ground between measures that reduce objective risk and measures that reduce perceived risk. Risk perception research can inform policy makers on how to balance objective assessments with public opinion regarding security priorities.

BENEFITS OF RISK PERCEPTION RESEARCH

Slovic uses the Ford Pinto as a case study to illustrate the value of understanding risk perception. After producing and selling the Pinto, Ford discovered that a defect in the fuel tank could cause the car to catch fire. Ford did a cost-benefit analysis and concluded that a recall would be too expensive. If Ford had considered perceived risk in the analysis they might have made a different decision.[11] Declining to fix the problem via a recall resulted in a public relations nightmare that cost Ford much more than a recall would have. Even though the actual fires did not create a significant economic problem, the perception that Ford's product might catch fire did. The mere perception of a threat was enough to cause severe problems. The same holds true for terrorism. If a terrorist organization provided a credible threat that a nuclear bomb would detonate in New York Harbor, the resulting evacuation and general atmosphere of the city would cripple the state and perhaps the national economy, independent of whether the danger was real. Understanding risk perceptions and responses to risk is vital to understanding – and ultimately affecting – public responses to terrorism.

Risk Perception and Political Attitudes

The study of risk is important in several ways. The first benefit to studying risk is that it allows psychologists to better understand political attitudes. Perceptions of risk drive public priorities.[12] As in the case of the Pinto, or nuclear energy, or airline security, the perception of risk – rather than actual danger – drives public demands for action. This phenomenon is demonstrated in cases of environmental hazards. Public perceptions of risk seriously affect management and regulatory organizations' budgets, agendas, and priorities.[13] For policymakers, especially elected policymakers, the psychological impact of environmental hazards is just as important as the physical impacts.[14] Thus, perceptions of risk are an important component of political attitudes.

Brian Gerber and Grant Neeley studied how perceived risk of routine hazards was related to attitudes about government regulation. They found that increased perceived risk of a hazard was positively related to support for regulation of that hazard, even when the cost of such regulation was stated to be significant. Two other variables affected this relationship: issue awareness and trust in the regulators. If respondents considered themselves to be ill-informed on an issue, there was no relationship between perceived risk and support for regulation. Trust moderated the relationship between perceived risk and support for regulation; if the respondents did not trust the regulators, then they were less likely to support regulation, even if perceived risk was high.[15] These results also apply to terrorism. Leonie Huddy and associates found that levels of perceived risk were linked to willingness to support aggressive anti-terrorist policies.[16] Studying which features of a terrorist hazard affect perceptions of risk allows policymakers to understand which terrorist hazards are likely to become important to the public and why. In our democratic society understanding public priorities is essential to developing a politically acceptable action plan.

Risk Perception and Behaviors

The second benefit of studying risk is that researchers can understand how perception of risk impacts behaviors.[17] Along with Ellen Cohn, the author has documented that perceived risk of terrorism was positively related to adaptive behaviors such as having an emergency supply kit.[18] Similar studies have found this relationship to hold true for fear and perceived risk of crime as well.[19] J. Sherwood Williams and others, in a study of urban adolescents, found that fear of crime was an important predictor of defensive behaviors such as going out in groups, learning self-defense, carrying spray, or carrying a safety whistle.[20] Paul Lavrakas compared suburban and urban dwellers and found that urban dwellers, who had a higher fear of crime, restricted their behavior more than the subjects living in the suburbs.[21] David McDowell found a positive link between fear of crime and gun ownership.[22] Gustavo Mesch found that an increase in perceived risk was indicative of a decrease in nighttime activities.[23] The behavioral effects of perceived risk and fear of crime are well documented, though the research has not differentiated behavioral changes related to fear from those related to perceived risk. Numerous behavioral changes were also observed after 9/11, though it is unclear which of these changes were caused by perceived risk.[24] Identifying the extent to which perceived risk changes behaviors is an important goal of risk researchers.

Risk Amplification and Attenuation

The third benefit to studying risk is that it can clarify the conditions under which perceptions of risk either increase or decrease. Risk researchers have developed a descriptive mechanism known as risk amplification. Risk amplification is concerned with factors, both personal and social, that create either a heightened or lowered sense of risk within a society.[25] Risk amplification ties reactions to socio-economic processes as well as event characteristics.[26] This framework considers issues such as the stigma associated with a hazard, assignment of blame, and the social dynamics within a society in order to understand why a risk might become over- or under-estimated.[27] Understanding the complex interplay between perceptions of risk and social processes is an important contribution of risk research, and can inform communication and policy decisions regarding risk.

The social amplification of risk framework can be a useful tool for tracing the social evolution of attitudes toward terrorism. Consider that several major terrorist attacks occurred that involved U.S. citizens before 9/11, such as the two previous World Trade Center bombings, the Oklahoma City Bombing, the Marine barracks bombing in Lebanon, and the dual U.S. Embassy bombings in Kenya and Tanzania. Counter-terrorism did not become a national priority, however, until after 9/11. While the damage of the 9/11 attacks is one variable, the risk amplification framework provides a mechanism for understanding what other social factors were involved in alternately keeping terrorism in the background for a time and then thrusting it onto an international center-stage.

Risk Perception and Communication

The fourth benefit of studying risk is that an understanding of risk perceptions is vital to developing proper communication and education strategies.[28] It is important for decision makers and enforcement officials to be able to explain any hazard and the related course of action to the public. Educational initiatives must also build an accurate and useful public awareness base. Neither of these goals can be accomplished unless communicators understand how risk is defined and perceived by the public. In the case of terrorism, communication is particularly important because any major warning must be accompanied by instructions, and those instructions must be heeded by the public at large.

Several factors are known to impact risk perception. The first and most important is trust, which has been repeatedly linked to perceived risk. Margaret Heldring identified credibility as the first requirement for effective risk communication.[29] Trust in information source was found to impact perceived risk of environmental health hazards.[30] In a study that manipulated various features of communication of risk, the manipulations were not as important as issues of trust in government and authority.[31] Trust seems to be more important when communicating hazards about which the perceiver has little knowledge.[32] Any communication or education initiative that lacks credibility will have minimal effect on perceptions of risk. It is vital that agencies and persons responsible for communicating terrorism information to the public maintain this trust, or any directions concerning evacuation, sheltering, et cetera, stand a fair chance of being ignored by the public.

Lennart Sjöberg suggested that the issue of trust may explain why lay person risk perceptions seem irrational to experts; if the experts themselves lack credibility, then disbelieving their assurances is the only rational response.[33] Slovic addresses systemic influences that destroy trust. These influences are noticeably present in the arena of terrorism. One, failures are more noticeable than successes. This is especially true for the war on terror, where most successes cannot be identified or publicized because such information might compromise intelligence sources. Two, failures are given greater weight than successes, even if salience is equal. With regards to terrorism, the costs of failure are much more noticeable than are the benefits of success, because success merely preserves the status quo. Three, once an audience loses trust, it screens future perceptions. Failures become even more noticeable, because people tend to retain information consistent with their attitudes.[34] Julie Barnett and Glynis Breakwell use the 1995 contraceptive pill scare in England to illustrate how contradictory expert testimony erodes credibility and inflates risk.[35] Due in part to the 24-hour news cycle, the American public is treated to constant contradictory "expert" testimony. While trust is an extremely important variable in risk communication, it is also a very fragile one.

Specificity is another communication factor that impacts perceptions of risk. Risk communications that are not specific are more likely to increase anxiety without increasing awareness.[36] One example of the importance of specificity in terrorism communication is the color-coded alert system used by the Department of Homeland Security (DHS). For law enforcement officials, this alert system is marginally useful, if each level of alert is accompanied by specific actions and procedures. Such procedures are developed at the local level, however, so the DHS system by itself is only useful if the local jurisdictions have attached their own set of specifics. More useful to local authorities is information received through law enforcement channels such as Law

Enforcement Online or the FBI's Joint Terrorist Task Force gateway; this information is more useful precisely because it is more specific. For the general public, the DHS color-coded system is rightfully criticized for being counterproductive, precisely because it offers no useful information to a public audience.

Heldring outlined criteria for risk communication to be considered useful: credibility, specific information about the risk, specific information about what is being done by authorities, specific information about what the audience should do, and empathy.[37] In the case of terrorist warnings, unfortunately, such specific information is usually unavailable, or cannot be shared with the public. But risk research provides insight into how terrorist warnings should ideally be constructed and relayed.

Barnett and Breakwell postulated a mechanism by which past risk communications influence the response to further risk communications. The series of previous hazard notifications (a hazard sequence) impacts the way a hazard is normalized; this normalization results in a hazard template – a social heuristic that speeds the processing of information related to the hazard. The hazard template is the public's conception of the hazard and includes such characteristics as the organizations responsible, potential victims, causes, and consequences; this template provides a common ground for interpersonal communication about the hazard. Barnett and Breakwell conclude that in order to understand how people will react to a future risk communication, we must first understand how previous communications have shaped the audience's hazard template.[38] Because so much of the average person's experience with terrorism is from media messages, it would be useful to examine how these messages have constructed the hazard template of "terrorism" and how this template filters new messages.

Situational Factors

A fifth benefit to studying risk is to identify situational factors that influence risk perception. Psychological research has identified four situational factors that influence how people judge risk: expected loss, catastrophic potential, other qualitative characteristics (these will be discussed in greater detail below), and beliefs about cause.[39] Risk perception research provides insight into which event or situational features will be most important for particular hazards. In the case of terrorism, such information assists researchers or public officials – given specific information about the characteristics of a terrorist threat – to predict how people might react to that threat.

Personal Factors

Several intra-personal factors have been linked to risk perception. In the health psychology literature, three factors have been associated with risk perception: demographics, socio-psychological variables (like those discussed previously regarding responses to terrorism), and structural variables such as experience with the hazard or depth of knowledge.[40] Sjoberg postulates that certain individuals may demonstrate a greater sensitivity to risk, and this possibility deserves empirical analysis.[41]

Slovic linked risk judgments to gender (women judge risk to be higher), race, (minorities judge risk as higher), political worldview, personal affiliations, emotional affect, and trust (as outlined above). Upon closer inspection, however, it appears that race and gender differences in perceived risk can be tied to the "white male effect."

About one-third of white men have much lower risk judgments than everyone else, regardless of gender or race; when these responders are excluded from analyses, race and gender differences become non-significant. Examining these low-risk respondents reveals that they tend to be well-educated, have high socioeconomic status, conservative political orientation, and higher trust in authority.[42] The white male effect may provide a link to other personal factors that influence risk perceptions. Fortunately, intra-personal variables is one area in which terrorism attitude researchers have acquired a great deal of useful information; as previously discussed, however, most of the research failed to differentiate between reactions to past events and reactions to potential events. The risk literature provides the empirical background to devise and test specific hypotheses regarding potential terrorism and personal variables.

In sum, studying risk perception is beneficial in many ways. It provides insight into how risk perception is related to attitudes and lifestyles. It provides a framework for understanding how risk is amplified or attenuated across a culture. It allows for the proper development of effective communication and education strategies and it provides an understanding of situational and personal factors associated with risk perception. The natural inclination of the individual is to reduce risk. It is an important contribution of psychology to provide empirical analysis of how and why risk is perceived, and what consequences are associated with risk perception.

THE PSYCHOMETRIC PARADIGM

The psychometric paradigm was developed as the research paradigm that logically follows the assumption that risk is psychologically determined. The primary assumption of the psychometric paradigm is that risk is inherently subjective.[43] Recall the importance of qualitative hazard characteristics to lay perceptions of risk. The psychometric paradigm is based on techniques that collect and analyze subjective rating of these qualitative characteristics, including both global (e.g. riskiness, etc.) and dimensional (e.g. controllability, familiarity, etc.) evaluations of particular hazards.[44] These subjective ratings then form a sort of personality profile for each hazard being studied. It is this pattern of qualitative ratings that affect perceptions of risk. Psychometric studies have discovered five factors that generally account for risk perceptions: qualitative features of the hazard, benefits of the hazard, annual mortality rates, catastrophic mortality potential, and relative mortality seriousness.[45] For the purposes of the proposed studies, the factor of greatest interest is the qualitative features, or personality profile, of the hazard itself. An understanding of how these qualitative ratings impact perceptions of risk is a vital step in understanding attitudes toward terrorism.

Dimensions and Factors of Risk

Psychometric studies have studied numerous dimensions of risk for scores of hazards. Dimensions commonly used are listed in Table 1. Obviously, so many dimensions can lead to very cumbersome research designs, so most risk studies include the dimensions most applicable to the study at hand. For example, a terrorism study may elect to exclude inequitability, because the inequity of terrorism risk is not likely to be an issue as it might be for the risks of a toxic waste dump or nuclear power plant.

Table 1

Qualitative Dimensions of Risk Used in the Psychometric Paradigm[46]

Voluntariness	The extent to which exposure to the hazard is voluntary.
Immediacy	The extent to which the consequences are noticed immediately.
Knowledge of exposure	The extent to which a person knows if he has been exposed.
Expert knowledge	The extent to which experts know about the hazard.
*Controllability**	The extent to which a victim can control the severity of consequences due to exposure.
Novelty	The extent to which the hazard is new to society.
*Catastrophic potential**	How many fatalities occur at once.
*Dread**	The extent to which the effects of exposure are dreaded.
*Severity**	The extent to which the consequences of exposure are severe.
Delayed	The extent to which the consequences of exposure are delayed.
C*ertainly fatal**	The extent to which exposure will definitely cause fatality.
*Increasing**	The extent to which the risk is increasing over time.
*Preventability**	The extent to which the hazard is preventable.
*Inequitable**	The extent to which risks and benefits are not equally distributed across society.
*Affects future generations**	The extent to which the hazard will affect future generations.
*Global catastrophe**	The extent to which the hazard threatens a global catastrophe.
*Easily reduced**	The extent to which risk associated with the hazard can be easily reduced.
*Personal impact**	The extent to which the risk affects the respondent personally.
Observability	The extent to which the effects of exposure are observable.

Dimensions marked with an asterisk (*) were directly correlated with perceptions of risk.[47]

Risk studies have also sought to reduce the number of analyses by reducing these qualitative dimensions into factors via factor analysis. This approach has been very successful and has lead to robust research findings. Two factors have been consistently (though not exclusively) identified: *dread risk*, which is associated with lack of control, dreaded consequences, catastrophic potential, inequitable distribution, increasing risk, and fatal consequences; and *unknown risk*, which is associated with unobservability, novelty, unknown exposure, unknown to science, and delayed consequences.[48] Two other factors have also been identified in individual studies: number of people exposed

and severity of consequences.[49] The most consistent finding, however, is that the dread risk factor has been the best predictor of the overall perceived risk of a hazard.[50] Identifying the importance of dread and its impact on perceptions of risk is a valuable contribution of risk research in general and the psychometric paradigm in particular.

The identification of two primary factors that qualitatively described hazards has allowed risk researchers to map out a number of hazards in two-factor space. Such taxonomy is useful for two purposes. The first value is that it explains differences in risk perceptions across hazards. In fact, the perceived risk of a hazard is related to its position in the two-factor space. The second value is that it explains discrepancies between lay and expert estimates of risk. While lay perceptions of risk are consistently tied to dread risk, expert ratings are not.[51]

One risk judgment that merits special attention is signal value. An event is high in signal value if its occurrence changes the perceived probability of future occurrences.[52] For example, 9/11 was extremely high in signal value because it was taken as evidence that such attacks were more likely than before to occur again. In contrast, a suicide bomber on a bus in Tel Aviv has a low signal value, because this occurrence does not alter perceptions of how likely it is to occur again. Along with overall perceived risk, signal value has been linked to the position of hazards within a two-factor space.[53] Differences in signal value appear to account for differences in ratings of worry, need for awareness, and need for preventative efforts.[54] Signal value is also related to how well known a hazard is; new hazards tend to be higher in signal value. Signal value may be an important political consideration as well, because a hazard with high signal value is particularly open to risk amplification processes.[55] Barnett and Breakwell suggest that novel information is key to intensifying perceived risk, while confirmatory information has little impact on risk perception.[56] Signal value is an important variable in risk perception. Given the extremely high signal value of 9/11, this concept should be an important consideration in any study of attitudes toward terrorism.

In sum, the psychometric paradigm is a research methodology derived from the assumption that risk is subjective and that qualitative features of hazards will be linked to perceptions of risk. Numerous qualitative features (dimensions) have been studied; some are consistently related to risk and some are not. One of the most relevant features to terrorism hazards is signal value. These dimensions can also be reduced to underlying factors – dread and unknown risk. These two factors allow the hazards to be mapped on a Cartesian plane. The location of each hazard is useful for understanding how it is perceived. This paradigm provides a promising set of techniques with which to better understand attitudes toward terrorism. Researchers may be able to develop "personality profiles" for different attacks, profiles which in turn could lead to the creation of a taxonomy of terrorism based on subjective evaluations.

The Psychometric Paradigm and Specific Hazards

While most psychometric studies have examined many different hazards, the paradigm can be adapted to accommodate an in-depth study of one hazard. Single hazard domains have been studied using the psychometric paradigm, and they too can be represented in two-factor space, where position is predictive of perceived risk.[57] Slovic examined attitudes toward unwanted land uses and also provided several examples of hazards that have been studied using psychometric techniques to specific hazards, such as automobile structural defect, railroad accidents, and automobile subsystem failures.[58]

While in these studies risk dimensions were reducible into factors, the factors did not always match those found in multiple-hazard studies; for example, the factors observed for automobile subsystem defects were "foreseeable" and "severe, uncontrollable damage."[59] Given the nature of the hazard, these factors are more logical than dread risk and unknown risk, the factors discussed above. The psychometric paradigm has also been successfully applied to single hazards, but Slovic cautions against representing complex events as a single homogenous data point.[60] While terrorism has been included as a single hazard in past psychometric studies, the complexity and relevance of terrorism in today's society merits an empirical exploration of terrorism as the entire hazard space.

APPLICATION TO HOMELAND SECURITY/EMERGENCY PREPAREDNESS

Based on the principles outlined above, several recommendations can be made for those directly involved in homeland security, emergency preparedness, and disaster recovery. These recommendations are purposely general, because the specifics of how to implement them will vary from one context to another. This list is not intended to be exhaustive; surely other recommendations can be made, again based on a specific context. The following do provide, however, a framework within which to apply the research cited here.

First, it is essential for an organization to build trust with its audience/constituents. Without trust, any information from that organization will likely be discounted, including information about levels of safety, disaster scenarios, or evacuation procedures. One important aspect of gaining and/or maintaining trust is to make the successes of an organization as visible as possible. This task is more difficult than it sounds, because the failures of any organization are generally more apparent and noticeable than are its successes. In some cases, particularly with intelligence organizations, successes cannot be shared with the public because such information may compromise future efforts. But it is essential that agencies involved with homeland security have proactive campaigns designed to build trust with the public by actively communicating information favorable to the agency. Agencies can also build trust in the way that they deal with failures. Open communication about the cause of a failure, and steps being taken to prevent another, can and should be used to rebuild trust after an agency fails to meet its responsibilities.

A psychological phenomenon that naturally inhibits trust is hindsight bias, or the "I-knew-it-all-along" phenomenon. Once an event has occurred, observers tend to overestimate the predictability of the event. This phenomenon means that failures are not only more noticeable, they are considered to be inexcusable, especially failures of foresight. From the public's perspective, any catastrophe or disaster could have been avoided, because there was sufficient evidence beforehand that it was going to occur. From an agency's perspective, the evidence predicting an event was buried within the evidence against the event occurring, and thus no foresight was possible. Agencies, and especially their press liaisons, must be aware of this difference in perspective and be ready to publicly account for it.

Second, agencies must offer specific information whenever possible. This point is particularly salient for organizations tasked with motivating people to take action. People tend to ignore general instructions that do not include specific actions. Of course,

the actions requested must also be sensible to the public, or even specifics will be ignored. Therefore agencies must not only provide specific instructions, but give detailed (and simple) explanations for those instructions. Specific information is also needed for warnings. As discussed above, the color-coded system is largely useless to the general population because of its lack of specificity. If details cannot be given, the agency must consider whether releasing general instructions or warnings will actually cause harm to their communication efforts, either through creating distrust among the public, or through desensitizing their audience to such communication. In some cases, it may actually be advisable to present no information rather than to present information that the audience cannot use.

Third, organizations must understand the public's priorities. In cases of general homeland security or emergency preparedness issues, public opinion polls can offer a basic level of insight. In more specific cases, some level of primary research may need to be conducted in order to identify priorities. Once an organization can understand the perspective (and thus the priorities) of its constituents, they are better prepared to address those priorities. Often an agency is already addressing these priorities, and it simply needs to do a better job of communicating these efforts to the public. In other cases the public priorities may need to be altered; this is a very difficult thing to do, but it is possible if the issues of trust and specificity have already been addressed. If an agency does find it necessary to conduct a campaign to alter the public priorities, awareness of public opinion will inform decision makers of the progress of such a campaign.

Fourth, the qualitative dimensions (and responses to them) discussed above should be incorporated into scenario development exercises. Scenario development may be more accurate if the subjective features of a threat are included along with the objective features. Of course, the impact of these subjective features is still a matter of ongoing research, especially in the area of terrorism, so such a process would necessarily be iterative. Once this information is added to our current knowledge and accounted for in predictive models, it should allow for a more sophisticated and accurate prediction of actual behaviors.

CONCLUSION

The study of attitudes toward terrorism is a vital psychological endeavor in the post-9/11 world. Fortunately, much work has been done and the resulting literature provides a great deal of insight into how people respond to terrorism and other threats of violence.[61] Unfortunately, most of the empirical work has focused on responses to past terrorist incidents and has looked mainly at personal factors that are related to such responses.[62] Because each terrorist attack evokes anger and resolve, however, terrorists primarily achieve their goal of fear and intimidation through the threat of future attacks rather than the occurrence of previous ones. From a psychological perspective, the terrorism that has not yet happened is as important as the terrorism that just happened.

Terrorism's future-orientation highlights the importance of understanding how people respond to threats as well as to actual incidents. The best psychological approach to such attitudes is through the field of risk. Risk is based on judgments, and thus is psychological in nature. The psychological study of risk provides insight into how people view various threats, and therefore informs predictions about how people will react to

the threat of terrorism. The psychometric paradigm specifically offers a valuable methodology to explore which features of a terrorist incident drive psychological perceptions and reactions to that incident.

Terrorism – more specifically the threat of terrorism – has become a driving cultural and political force. Credible threat is the currency of terrorist organizations. An organization that cannot threaten and be taken seriously has no power to change attitudes and behaviors. Because the power of terrorism comes from such threats, controlling risk has taken on national significance, with an entire cabinet-level department, as well as local and state-wide partner agencies, devoted to managing (and hopefully reducing) risk. These agencies cannot properly reduce risk, though, without first understanding how risk is perceived. Because of the United States' political structure, public attitudes toward terrorism occupy a pre-eminent place in establishing government priorities. It is essential that psychologists develop empirically-tested knowledge about how these attitudes are constructed, how they change across time, and how they impact behavior. The literature reviewed here provides essential progress toward understanding terrorism attitudes, and outlines a promising framework for continuing that progress.

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