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Synthesizing Instruction and Inoculation in Tailored Crisis Communication Messages of Self-Efficacy

Summary Description: This project identifies consumer segments based on their general attitudes and values that can be used to develop effective messaging to mitigate the impact of terrorism events.

1. Theme Area: Risk Perception and Communication.
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4. Co-Investigators: Dr. Bobi Ivanov
5. Key Words: Terrorism, Risk Communications, Inoculation, Communication Strategies, Resilience

6. Brief Description:
For too long, government agencies presumed that a single warning shared through standard media channels was sufficient for reaching all stakeholders during a crisis. This linear view fails to account for the diverse informational needs and cultural constraints within the broad audiences that are confronted by crises (Sellnow, Ulmer, Seeger, & Littlefield). As a means of addressing variance of audience needs, more recent scholarship has bridged instructional research with risk communication. The objective of this blended approach is to enhance an organization or agency’s capacity to generate messages that attend to the varying learning styles inherent in their audiences. Moreover, this line of research seeks to account for varying cultural preferences in crisis messages. Through ongoing message testing procedures, current research seeks to engage diverse audiences in a dialogue of message preferences prior to a crisis situation. One promising line of such instructional or informative communication focuses on inoculating or two-sided persuasion messages. These messages, delivered before a crisis and at the onset of a crisis recovery period, have the potential for diminishing loss of confidence in government agencies or in expediting the recovery of confidence for these agencies.

This project provides a framework for establishing communication strategies that, when implemented routinely prior to a crisis can reduce recovery time and enhance public resilience. Current research provides a detailed summary of effective crisis communication. Existing research, however has only recently begun to evaluate the effectiveness of communication strategies used prior to an acute crisis event. This project focuses on two highly relevant communication aspects in maintaining or rebuilding public confidence—accepting uncertainty and self-protection (Seeger, 2006; Sellnow, Ulmer, Seeger, & Littlefield, 2009). We selected these two aspects because of their salience in current literature and because of our presumption that they have relevance to post-crisis recovery. This project will build on previous research that has (a) successfully identified the importance of instructional messages in raising the perceived level of self-efficacy in consumers, and (b) identified empirical linkages between message content (including inoculation, explanation, and recommended actions) and perceived confidence in both the relevant government agency and self-efficacy. Through the integration of these past studies, responders will gain the ability to reach appropriate consumer groups with the most effective tailored messaging intended to reduce public fear and avoidance behavior.

7. Objectives: This study will: (a) Provide an assessment of current knowledge relating pre-crisis messages and post-crisis resilience and recovery, (b) Test the effectiveness of two primary best practices (“accepting uncertainty,” and “self-protection”) in order to provide descriptive information to aid in targeting media delivery including demographic, lifestyle and media usage profiles, (c)
produce the basis for ultimately developing a “playbook” of message strategies designed to reduce fear to a reasonable level following a crisis event. This playbook will also include potential communication strategies to be employed prior to a crisis that may inoculate the public against a loss of confidence.

8. Interface with CREATE Projects: Rather than duplicating survey efforts, this project is designed to interface directly with CREATE’s proposed nationwide data panel to be shared across the Risk Perception and Communication theme area. This project contributes to the panel study in two ways. Initially, our learning styles scale contributes to the identification of common risk perception and risk related behaviors. Second, our message testing strategy helps to refine the understanding of role these behaviors play in decision-making during high risk or crisis events. As such, the communication study we propose contributes to our understanding of risk perception, the influence of fear on comprehension, and the degree to which messages influence emotions, self-efficacy, and consumer confidence. Specifically, this study adds the potential impact of message tailoring to John and Burns’ efforts to understand both the long-term and short-term impact of crises on decision-making by U.S. residents.

9. Previous or current work relevant to the proposed project, expected DHS users.
This study reflects the integration of previous work conducted with support from the following two grants provided by Department of Homeland Security (DHS) Centers of Excellence: National Center for Risk and Economic Analysis of Terrorism Events, sponsor ID# is 132256 35399/DE-AC05-76RL01830; and The National Center for Food Protection and Defense, Grant Award Number 2007-ST-061-000003. This previous work provides a foundation for the current proposal. Specifically, we have identified a relationship between learning styles and tendency to respond to particular message content. This project would extend this research to include specific actions related to levels of concern prior to an event, self-protection during an event, and tendency to return to relatively routine or normal behaviors after an event. Cost for this project is reduced notably because base messages were designed for the previous projects. To continue our research, we only need to produce message segments, rather than entire treatment and control messages. Our previous research also established reliability and validity levels for the scales we propose adding to the proposed nationwide data panel to be shared across the Risk Perception and Communication theme area.

10. Major Deliverables, Research Transition Products and Customers:
Deliverables from this study will include a written report that (a) describes the relationship among message strategies (including interpersonal communication), perceived self-efficacy, and consumer confidence. (b) details the empirical relationships that will be translated to determine practical applications for risk and crisis communicators. The findings will be transitioned into practical communication strategies that can be employed in the day-to-day communication of spokesperson—both before and after a high-risk or crisis situation. Specifically, a training module will be created that builds on a larger “playbook” of sorts that provides recommendations for strategically tailoring messages to best foster self-protection during an event and to restore confidence after an event.
Transitional research of this nature has been developed by the research team for spokespersons at a variety of agencies. Our ultimate end users are those in decision-making and spokesperson roles with government agencies and organizations. We have presented our findings and engaged in discussions about our risk communication recommendations with such agencies as the Department of Homeland Security, Centers for Disease Control and Prevention, National Academies of Science, Southern California Earthquake Center, United States Geological Survey, National Oceanic and Atmospheric Administration, the United States Department of Agriculture, Transportation Security Administration, and the World Health Organization. In all of these interactions, research funded by
CREATE, NCFPD, and START for risk communication projects was emphasized.

11. Technical Approach:
Independent and Dependent Variables
The independent variable for this study will be the messages from agency spokespersons and a media message summarizing a simulated terrorist attack that participants view during the experiment. A series of baseline measures will be conducted for later comparison between the two groups. Two messages will be used to determine their effectiveness at increasing participant efficacy and consumer confidence. The first message, serving as the control, will be a typical media message based on a review of messages actually distributed during a post-crisis recovery period. In addition to the message, we will also introduce an interpersonal dimension. The interpersonal communication will reflect an endorsement of media message shared in an informal conversation setting. Individuals in the treatment group will also receive an inoculation message designed to promote confidence in the agency charged with responding to the crisis. This message will be a manipulated news broadcast that incorporates the strategies of uncertainty reduction and self-protection as recommended by previous research.

This study will examine two dependent variables. First, perceived efficacy will be measured using an adaptation of a scale developed by Frisby, D. Sellnow, T. Sellnow, Lane, and Veil (2011). The original scale is a 9-item, 5-point Likert type scale where participants respond on a scale ranging from very uncertain (1) to very certain (5). In a series of three studies, the scale has consistently revealed one reliable and valid factor comprised of 7-items (e.g., I believe I can do things to protect myself so that I can be confident of my safety during a post-crisis recovery period). In the three previous studies, the scale has achieved high reliability ranging from .87 to .91. The second dependent variable will be consumer confidence. Measures of consumer confidence will be determined in collaboration with William Burns based on the proposed panel survey.

Experimental Design
To assess the impact of media messages in crisis on consumer efficacy and confidence, a Solomon Four Group experimental design will be employed. This method will randomly assign participants and evaluate whether random assignment was effective, determine whether pre-tests sensitized participants to the information, and allow for comparison between control and treatment conditions over time. More specifically, the first group will be administered a pre-test, view the control message, and complete the post-test. The second group will be administered a pre-test, view the treatment message, and complete the post-test. The third group will view the control message and then take the post-test only. The fourth group will view the treatment message and then take the post-test only.

Participants will be recruited from the proposed nationwide data panel to be shared across the Risk Perception and Communication theme area. It will be necessary to recruit approximately 200 participants to provide sufficient numbers for each of the four experimental conditions. Individuals who volunteer to participate in this study will receive a link to an electronic survey hosted on Qualtrics. When beginning the survey, each participant will be assigned by the survey software to one of the four conditions (i.e., pre-test control, pre-test treatment, control, or treatment). The participants will then read a consent form, complete the experiment, and be thanked for their participation.
**Data Analysis**
First, the groups will be examined for demographic equality to assure that random assignment worked using a multivariate analysis of variance (MANOVA). If the groups fail to reveal any significant differences, as expected after random assignment, then the data will be further analyzed. If significant differences are found, then these variables will serve as control or covariates in subsequent analyses.

Second, it will be necessary to determine whether the administration of pre-tests sensitized the participants to the data collection. To examine for this possibility, the four conditions will be recoded into two groups: (a) those who received a pre-test and (b) those who did not receive a pre-test. A MANOVA with group (i.e., pre-test vs. no pre-test) will be compared on the dependent variables to determine whether the pre-test group significantly differed from the no pre-test group (indicating sensitization). If no differences exist, the data will be further analyzed. If differences do exist, time (pre and post-test vs. post-test only) will be entered as a control or covariate variable.

Last, the data will be analyzed using a MANOVA with condition (i.e., pre-test control, pre-test treatment, control, or treatment) entered as the fixed factor variable with efficacy and consumer confidence entered as dependent variables. Wilk’s Lambda will be used to assess differences between the dependent variables that occur due to the independent variable. This series of analyses will reveal two results allowing for conclusions to be drawn including: (a) whether the manipulated message improves efficacy and consumer confidence and (b) whether participants increase from pre-test to post-test in efficacy and consumer confidence.

**11. References:**


