



Psychological Research on Disaster Response

Dr. Mark Weiss, Assistant Director for Social, Behavioral and Educational Sciences in the White House Office of Science and Technology Policy, has asked us to assist him in finding examples of how psychological science can inform policy on issues pertaining to the prediction, prevention, preparation and mitigation of the effects of, and recovery from, disasters like hurricanes Katrina and Rita.

Dr. Weiss has asked that we develop one- or two- page vignettes or case studies explaining specific areas of psychological research that pertain to various aspects of disaster preparedness and recovery. These need to be written for the non-psychologists and they should explain why this research may help inform policy. These vignettes should also provide a summary of data and a brief history of the scientific work on the topic with a reference or two for further information.

Please consider writing one of these for us to bring to the attention of Dr. Weiss. If you are unable to take the time to write up your research, consider outlining a vignette, and we at APA will try to develop it into an appropriate format for use by Dr. Weiss.

We have posted those that we have received here and express our sincere appreciation to the authors for taking the time to construct them.

Katrina Coordination

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Effective coordination and communication in and across teams and organizations is at the heart of organizational effectiveness. Though technology (GPS receivers, interoperable radios, decision aiding displays) can play a facilitating or interfering role, it cannot by itself make a poorly coordinated organization effective. Knowing who is in charge, individual and team roles, information sources and recipients, and information sharing timing and constraints are keys to a well-coordinated team or organization. These coordination capabilities need to be practiced, assessed, and refined.

Statement of the problem: How can we evaluate coordination capabilities of a team and organization?

Relevant research: Social and behavioral scientists have modeled and experimentally tested various aspects of team and organizational behavior and performance [1]. The increasing cognitive complexity of social systems and their associated tasks has led to a flurry of research activity on team cognition (i.e., team thinking) and associated concepts such as shared mental models and team situation awareness. Recent research has highlighted the importance of communication and coordination in team- or organizational-level thinking [2].

Some of the first steps in understanding and modeling team-level thinking or cognition include the development of measures and metrics of team communication and coordination [3]. Work in this area has emphasized the dynamic and distributed nature of team cognition and has focused on communication behavior as a rich source of data. A variety of methods and metrics have been developed that are based on the identification of patterns in team communication content and information exchange. These patterns are then mapped on to operational team characteristics and quantified. Operational characteristics that can be quantified include team or organizational leadership, interruptions, conflict, team effectiveness, and team situation awareness [4]. Methods for using communication data to quantify and evaluate coordination are currently under development. Models that account for team communication and coordination response to a variety of variables (i.e., stress, workload, fatigue, unpredictable events, unfamiliar team members, remote operations) are similarly under development.

There is a growing emphasis on unobtrusive measures that can be taken in real-time automatically so that teams and organizations can be monitored and timely interventions applied when it is clear that there is a problem. These metrics can be used to identify stable patterns and to observe how patterns change over time (e.g., gradually in training or suddenly in face of problems). These methods have primarily been developed in the context of military command-and control in order to understand, predict, and improve team and organizational communication and coordination, but there are other promising contexts. Potential applications involve the assessment of team or organizational coordination in the context of emergency operations or interagency intelligence analysis. Typically there have been no metrics applied to assess team or organizational coordination and effectiveness in these contexts. Although table-tops, drills, and exercises have proliferated since September 11th, 2001, the assessment metrics are weak (e.g., subjective opinion) to nonexistent (i.e., a simple check that the drill was completed, but no assessment of coordination quality). Quantitative and objective metrics to assess coordination are necessary to select groups that are best coordinated, train groups by targeting coordination weaknesses, diagnose the causes of coordination failure, evaluate success of technology, generate innovations to improve coordination, and provide just-in-time intervention during emergency operations.

Implications for Katrina-like Disasters: Real-time coordination and communication metrics and models offer an automatic, quantitative, and objective approach to the assessment of the capabilities of organizations and teams to work together, exchange information, and collaborate effectively and efficiently. They also provide a means for just-in-time intervention when coordination is failing. Coordination of emergency response teams stands to benefit from this work.

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How can we Promote Community-level Well-being, Solidarity and Capacity following Disasters?

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Statement of Problem: Following natural and man-made disasters, what steps can be taken to promote community-level social well-being, solidarity and capacity, as well as to avoid social maladies (including immediate civil unrest as well as long-term citizen disenfranchisement)?

Relevant Research: Social disruption -- including destroyed infrastructure/homes/ neighborhoods, disrupted normal daily activities, displacement away from neighbors and familiar environments, and disrupted communication -- facilitates a state of anomie. This classic sociological concept describes a state of normlessness and loosening of social norms, which is manifested in such social maladies as suicide and riots in what were previously socially and civilly cohesive and functioning environments [1]. Related to anomie is a reduced sense of control over one's own life. A sense of community -including residing within known social groups, familiar cultural activities, structured social relationships, and established roles -- mitigates a sense of normlessness [2]. Victims search for familiarity/normalcy in an attempt to make sense out of the chaos of disasters. Essential for victims is a sense of control, including accessibility to the most accurate communication from recognized/trusted community officials regarding post-disaster affairs. The stabilizing features of community help reestablish a sense of balance and norms. Practically speaking, this includes allowing neighborhoods to retain their proximity [3], allowing churches perform their social-spiritual support roles, permitting known-local leaders (municipal government and non-governmental leaders) to perform leadership roles, as well as basic access to information such as: "Is _____ alive?" "Is my home destroyed?" "Do I have a job?" "When can I get back to my "normal" life?" Particularly important are established localized social support structures including churches, schools, recreational organizations, civic leadership, and other organizations particular to each locality and culture. Outside agencies, foreign relief efforts and news media can have an aggravating effect on the individuals and their community [4]. As much as possible, the autonomy of the community (including decisions by legitimate local leadership) should be respected and reinstated [5]. These elements are even more important if a community is physically relocated.

An "altruistic community," marked by increased levels of aid and support in which cooperation overcomes existing racial, political and other differences, gives way after the immediate response [6]. During the ensuing stage, marked by resuscitation of socio-political differences, communities that are "serviced" from the outside rather than finding internal answers to their disaster have less solidarity and capacity [7], which may translate into a "second disaster" [8], as was witnessed after Hurricane Katrina.

Policy implications in the event of a natural disaster like Hurricane Katrina: Effective pre-disaster planning at the community level is critical for an effective response to disaster. This should include analysis of existing social support, communication and networking structures. Response should follow, as closely as possible, the channels through which communities normally operate, thus alleviating a sense of anomie. Outside governmental and non-governmental relief organizations should recognize that their immediate responses may have a negative impact on long-term community well-being and should administer relief through pre-existing community social structures (recognizing that these may frequently be non-governmental). This will facilitate increased capacity, a greater sense of self-determination/control, and reduce long-term post-disaster maladies.

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Why is it Important to Allow People to Evacuate Disaster Areas With Their Pets?

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Relevant research - Research has demonstrated that people develop emotional bonds with their companion animals much like those between people [1]. Between 70-90% of pet owners describe their pets as family members [2]. Moreover, companion animals provide many benefits to their owners. Studies have shown that pet owners, when compared to non-pet owners, have less heart disease, lower blood pressure, and report lower levels of loneliness and depression [3]. Pets can also be an important source of support during times of personal illness or life transitions [4].

Policy implications in the event of a natural disaster like Hurricane Katrina - The role that companion animals play in the lives of their owners has clearly evolved. It is important that policies for their care and welfare during times of emergency evolve as well. Separating people from their companion animals during a natural disaster has the potential to have severe and long-lasting consequences. The feelings of uncertainty and ambiguity surrounding what may have become of one's pets when forced to evacuate without them can also have a significant impact above and beyond that of the upheaval associated with a traumatic event such as evacuation from one's home. For many people, asking them to evacuate without their pets is equivalent to asking them to leave without a family member. Additionally, it has been reported that some Hurricane Katrina victims refused to leave their homes because they were not allowed to take their animals with them, which may have resulted in additional (avoidable) casualties. Because pets may also serve as a buffer from the impact of stressful life transitions such as those experienced during an evacuation, policy provisions should be made that allow for their evacuation with their owners. Not doing so has the

potential to make an already stressful situation far more distressing for the victim of a natural disaster.

According to the Humane Society of the United States, more than 7,000 pets have been rescued since Hurricane Katrina hit the Gulf Coast. More than 150 organizations are now cooperating and coordinating the shelter and care for these animals while trying to reunite them with their owners [5]. Much of this effort could have been obviated had people been allowed to evacuate with their pets initially.

Policy level decision makers should be urged to take into account the growing awareness of the importance companion animals have in lives of their owners and the lasting psychological damage that may result from a forced separation in times of emergency. Policies can then be reevaluated and in some cases reformulated to provide clear strategies for ensuring that people can evacuate with their companion animals. Even if people were given the option to wait with their animals until other affected individuals were rescued, this would be preferable to being forced to leave a domestic animal to fend for itself during a highly stressful time.

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