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Three Psychological Principles of Resilience in Natural Disasters

John W. Reich

Arizona State University

The purpose of this conceptual paper is to present a discussion of some of the core components of human resilience occurring in the face of natural or human-made disasters. Resilience is often observed, but optimum responding is more than biological survival. Resilience implies the ability to bounce back and even to grow in the face of threats to survival. It is important to incorporate these key psychological principles into disaster planning. Research from the social sciences suggests three core principles of resilience, the “3 Cs:” Control, Coherence, and Connectedness. Research evidence supporting the importance of the 3 Cs to resilient responding is presented, followed by some elementary prescriptions for how they might be implemented. An approach to disaster planning and management can meld these principles into already-existing intervention techniques, creating a more comprehensive and a more integrated response, potentially resulting in improved intervention effectiveness.

The many forms of disasters, natural and human-made, have caused many people to rethink how their countries are organized to respond to such disasters. The problem is international, as the New York World Trade Center destruction, the Sumatran tsunami tragedy, Hurricane Katrina and war and infectious diseases tragedies continue to appear on the world stage. Such shocking disasters can cause people to worry about society's planning and execution in responding to such stressful events. Unfortunately, both of these have been found to be inadequate in many instances. Criteria for building in successful responding should be decided beforehand in order to later determine their success or failure. An integrative model of human resilience can and should guide our efforts for both developing and implementing disaster responses.

The social sciences now provide a rich depository of information about the fundamental principles of human resilience in the face of stressors such as we have seen recently. Research has shown that humans have a natural capacity to recover and even to enhance their individual adaptive capacities under adverse conditions (Miller, 2005). Indeed, recent evidence is showing that resilient responding is a common if not predominant response pattern to disaster (Bonnano, 2004, 2005). It would be valuable for disaster planning to more formally build on this knowledge, and an empirically-based model of human resilience for that purpose is proposed here.

Planning has placed major focus on how agencies and governments at the national and local levels should interact with each other. However, there is noticeably less said about how these should interface with individual human beings. We argue here that the key to genuinely successful disaster planning is to build in support for individuals'

resilience. The critical point of contact for planning should be at the interface between individuals and the social structures arranged to help them. Without attention to the psychological and social capital inherent in human resilience, our disaster planning may be limited in its effectiveness.

The Three Cs: Control, Coherence, and Connectedness

To investigate this issue, we should find ways to use the social science evidence on three central principles of human resilience.

The Principle of Personal Control... Decades of research have established that people need to believe that they have control in their lives, and those who have higher levels of personal control beliefs have higher life satisfaction (Rodin, Timko, & Harris, 1985), morale (Brown & Granick, 1983), lower levels of depression (Lachman & Weaver, 1998), and they tend to live longer (Dalgard & Haheim, 1998). When given control over experimental stressors, they show improved cellular immunocompetence (Laudenslager, Ryan, Drugan, Hyson, & Maier, 1983), lower physiological stress reactivity (Weiss, 1972; Robbins, 2005), and better cognitive and motivational performance even if they choose not to exercise their personal control (Glass & Singer, 1972).

People have a need to believe that they have the personal resources in order to achieve their goals. One of the major lessons from the Sumatran tsunami disaster was that the survivors placed a top priority on rebuilding their homes and businesses, getting jobs, and starting their lives again. They showed remarkable resilience and the psychological key to rebounding was this effort to regain personal control. Loss of personal control is a major reason why, for instance, prison is so dreaded, or that chronic physical illness and

loss of a spouse have harmful longer-term side effects. The looting and vandalizing commonly seen in disasters, while primitive acts, nevertheless are obvious ways that some people use to reestablish their control. Planning should provide less destructive pathways for reestablishing personal control.

The Principle of Coherence. The second “C,” a sense of coherence, is perhaps less readily apparent on the surface but may be even more fundamental to individual resilience. In the American Gulf Coast hurricane events, while people were calling out for food and water, they were also calling for explanations for their plight. They asked: Where is my family? Is my home OK? Is help coming? People wanted answers. These are natural instances of what psychologists call “epistemic behavior,” the drive to know, the desire to remove uncertainty. This drive for knowledge is a fundamental principle in the motivation of all organisms (Fiske & Maddi, 1961; Berlyne, 1963). Organisms engage in exploratory behavior even when no primary reinforcements are available (Butler, 1954; Montgomery, 1954), and obtaining and regulating stimulation maintains a homeostatic level of arousal and hence optimum functioning (Maddi, 1961). Conversely, not getting uncertainty reduced is aversive. Reducing it below normal levels by restricting access to the environment through manipulations such as sensory deprivation quickly leads to failure of neural growth and functioning (Riesen, 1961) and high levels of negative arousal, discomfort, and distress (Suedfeld, 1980).

Disaster responding should protect the drive for coherence through enhancing meaning, direction, and understand during the worst times of the disaster. Humans function best when they can maintain an integration of their cognitive, emotional, and behavioral capacities (Zautra, 2003). Disasters destroy the familiar, creating behavioral

disruption and cognitive disorganization both for the individual and the society.

Resilience capacities should be the central target of relief efforts to create longer-term restoration of the individual and the community.

The Principle of Connectedness. A notable characteristic of the behavior of people in disasters is to band together, to seek out others, to establish bonds even with strangers. Human nature is social, and extensive evidence shows the positive benefits of strong social ties. Neuroendocrine functioning is more effective higher with higher levels of social relations (Berkman, Glass, Brisette, & Seeman, 2000), as is better cardiac functioning (Uchino, Cacioppo, & Kiecolt-Glaser, 1996), and longer life (House, Landis, & Umberson, 1998; Wellin, Lappas, & Wilhelmsen, 2000). Conversely, social isolation is a major risk factor for susceptibility to illness (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997), presumably due to poorer coping (Cacioppo & Hawkley, 2003). Social support also plays the role of an interacting moderator variable, buffering stressful experiences to maintain health and well-being (Cohen & Wills, 1985; Thoits, 1993).

Experiencing loss of human contact is deleterious for physical and mental health. A major part of the stressfulness of disasters is the breaking of stable bonds with other people. Survivors seek to reestablish social bonds as quickly as possible and suffer anxiety if they cannot. This is one reason why the loss of a family member, or even the loss of a family pet, is so harmful. With our social bonds severed, we fear that we will have to face the threats involved in a disaster alone. Providing instrumental, informational, and emotional support are key components embedded in our social relationships.

Implications of These Principles for Disaster Planning and Management

One key to both short-term and longer-term dysfunctional responses to disaster is a failure to prevent or counteract the resultant effects that strike at three central human needs: The need for control, the need for coherence, and the need for connectedness. We argue that organizational and intergovernmental planning often proceeds without focus on these powerful psychological forces. It is at the level of the match or mismatch between organizational functioning and individual needs, the 3 Cs, that the true test of successful planning is to be found. How can planning at this boundary be engineered to respond optimally to the 3 Cs?

Control. The danger of “helping people” is that it can create a state of dependency. The unfortunate consequence of this is that it can undermine their natural sense of personal control. Help from agencies can provide food, shelter, and the medical necessities, but in principle this “external help” is potentially dangerous to people’s sense of their own personal control. Providing short-term help is critical to solving immediate problems, but the key to building personal resilience is to enable people, to give them resources to rebuild their own lives. At the same time, help should avoid longer-term dependency and loss of control by the individual. Studies consistently show that people are enormously resilient and can cope surprisingly well in otherwise disastrous circumstances, but the key to that is making it possible for them to set their own goals, make their own decisions, and guide the events of their own lives.

Coherence. Disaster responses should focus on helping people mentally and behaviorally create order and structure in their lives. There should be processes and procedures to reduce uncertainty, to provide as much information, knowledge and understanding as possible as soon as possible. Uncertainty undermines resilience and it is

the enemy of successful adaptation. The goal should be to generate cognitive clarity. Continuous radio and TV broadcasts, readily available personal communications equipment such as telephones and internet connectivity are necessary to preventing uncertainty. While police and the army and other relief organizations can keep order and provide structure and coherence in the public interactions, the psychological perspective explains why they are effective: People come to understand more clearly how the events in their lives are going to be regular, predictable, and understandable.

Connectedness. The individual's need for social connectedness is probably never greater than in times of disaster. Interestingly, the first two Cs, control and coherence, can be an integral part of the coming together of people. Things "get organized" and things get done and goals get achieved when people are able to bond and to work together. Volunteer organizations and informal collectivities need to be encouraged to develop long before a disaster occurs; when it does, the social network in which each person is embedded becomes a ready resilience resource, expanding the person's own capabilities and providing supportive relationships to get through the dark times.

The diverse agencies responding in emergencies each have their areas of strength and spheres of influence. Systematic coordination of efforts is necessary to avoid duplication and wastefulness of services such as was observed during the Sumatran tsunami disaster (Miller, 2005). The value of an integrative model such as that proposed here is that it provides a conceptual framework for understanding human resilience, highlighting specific domains and relevant classes of responses whereby both short-term and long-term well-being are most likely to be optimized.

A resilient community is characterized by interconnectivity (Allenby & Fink, 2005). Optimally, it should have parallel as well as hierarchical relationships, and formal AND informal relationships. This is “social capital,” which like any other kind of capital requires skillful investment and management to accumulate for use in times of need. These are also “natural resources” much as food, water, and shelter are, and they deserve full planning development for implementation in disaster situations. A resilient community is based on a population of resilient people. These three principles can guide our thinking about how we can best effectively enhance peoples’ natural response capacities in stressful circumstances.

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