

Psychological Responses to Natural and Man-made Disasters

Testimony of
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Mr. Chairman and Members of the Subcommittee:

Good morning. My name is Roxane Cohen Silver and it is my pleasure to have the opportunity to appear before you today to testify on the critical role of social science research in disaster preparedness and response. I am a professor of psychology and social behavior and medicine at the University of California, Irvine. For the past 25 years, I have studied how individuals adjust to stressful life experiences, such as loss of a spouse or child, divorce, childhood sexual abuse, and physical disability. I have also studied the impact of community disasters – both natural and man-made -- on individuals’ and communities’ psychological responses over time. Almost all of my research over those years – on acute responses to spinal cord injury, on the impact of the Southern California firestorms, on the impact of the Columbine High School shootings, and most recently on the September 11th terrorist attacks – has been funded by the U.S. National Science Foundation.

A few weeks prior to September 11, 2002, several people told me that they “heard” that psychological problems as a result of the terrorist attacks of September 11th were expected to peak around the one-year anniversary after the event. These kinds of pronouncements appeared on the front page of a prominent newspaper, on national media telecasts, and from mental health “experts”. Similarly, shortly after the recent Gulf Coast hurricanes, radio, television, and cable broadcasts were filling the airwaves with predictions about how individuals and communities would fare over time.

It is perhaps surprising that despite testimonials to the contrary, predictions about patterns of response over time following community or personal traumas are often made without the benefit of data. Conducting methodologically rigorous studies of responses to traumatic experiences is extraordinarily challenging in several important ways. Research in the natural environment is very expensive, labor intensive, and time-consuming. Obtaining external funding – particularly quick response funding following a national or community disaster – is often difficult, if not impossible. Obtaining samples of traumatized populations can be challenging, and research on entire groups of traumatized individuals is sometimes restricted. For example, governmental and community-based agencies may serve as gatekeepers to block access to potential respondents, even when those individuals are eager and willing to discuss their experiences with researchers. Institutional Review Boards are often uncomfortable with trauma-related research. As a result, studies tend to be conducted with small, non-representative samples of individuals who are willing to answer sensitive questions posed by a stranger. Many studies are conducted within clinical settings with individuals who seek professional help for their mental health symptoms. The conclusions drawn from these studies do not readily

generalize to the broader population. Sometimes, causal inferences are inadvertently drawn from correlational results. Despite the array of methodological problems that plague much of this research, “Coping Do’s and Don’ts” are frequently espoused in the media, without acknowledgement of the limitations of the research base from which they are drawn.

What we do know is that people hold strong assumptions about how individuals will respond to traumatic events. Such assumptions are derived in part from clinical “lore” about coping with loss and our cultural understanding of the experience. Yet many of our expectations about the coping process are wrong; how people are *supposed* to respond often stands in sharp contrast to the research data. Much of my professional career has been spent collecting empirical data that has enabled me to identify and challenge what I have labeled the “myths” of coping with trauma. My goal has been to understand the variety of ways people cope – to go beyond the assumptions and beyond the clinical “lore.” After conducting studies on literally thousands of participants across a wide variety of victimizations, one conclusion I can draw about how people respond to traumatic life events is that there is no one, universal response. Some people will express less distress than outsiders might expect; others will respond with pronounced distress for far longer than might have been judged “normal” under the circumstances. Few individuals respond with an orderly sequence of “stages” of emotional response. Many clinicians have suspected that if an individual does not have a negative response in the early aftermath of trauma, he or she would be at high risk for “delayed onset” of psychological problems, yet empirical support for such a position has rarely been obtained. Positive emotions are often ignored as a part of the response to highly stressful events, yet our own research suggests that positive emotions are quite prominent in the context of coping. Psychological responses are mistakenly assumed to be limited to those *directly* exposed to the trauma, and the degree of emotional response is mistakenly assumed to be proportional to the degree of exposure, amount of loss, or proximity to the trauma (e.g., as “objective” loss decreases, so will distress). “Recovery” from trauma rarely occurs after a few weeks or months, yet many lose patience with individuals who are unable to get back on their feet quickly. At this point, the data provide little support for the notion that there are “right” or “wrong” ways to respond to a stressful life event – although there are clearly *different* ways. Through my research and writing, I have maintained that we need to recognize and respect people’s need to respond to trauma in their own ways and with their own timetables.

For the past four years, I have served as the Principal Investigator of an NSF-funded study on the September 11th terrorist attacks on the US. In fact, our research team conducted the only large-scale national longitudinal investigation of emotional, cognitive, and social responses to the attacks. We interviewed several thousand people repeatedly -- from about two weeks after the attacks until three years later. Our results demonstrate quite clearly that the September 11th attacks had widespread impact across the country; results we have obtained in our longitudinal investigation strongly suggest that the effects of these terror attacks were not limited to communities directly affected. In fact, we have seen fascinating cross-community differences in response, although we are still exploring the reasons why residents of Littleton, Colorado might have responded so differently to the attacks when compared to residents of Miami. Although posttraumatic stress symptoms clearly declined over the years after the attacks, the degree of individual response was not explained simply by the degree of exposure to or loss from the trauma. Indeed, we have found great variability in acute and posttraumatic response among individuals who observed the attacks directly or lived within the directly affected communities. Moreover, a substantial number of individuals with indirect exposure (e.g., watched the attacks on live television or learned about them afterwards) reported symptoms both acutely and over the

year afterwards at levels that were comparable to individuals who experienced the attacks proximally and directly.

It is also clear that one must examine other factors beyond exposure and loss that may help explain posttraumatic distress in response to national disasters such as the September 11th attacks. In particular, we have found that those who had been diagnosed with mental health difficulties (anxiety disorders, depression) *prior to 9/11* were more likely to respond to the attacks with posttraumatic stress symptoms and higher levels of distress over time, controlling for their levels of exposure to and loss from the attacks. The strategies people employed to cope with the attacks and their aftermath, their prior traumatic life experiences, and the traumas they experienced in the intervening year post 9/11 are other important factors to help account for the variability in response. Finally, we found that the acute stress response to 9/11, as well as the posttraumatic stress symptom trajectory over the year post 9/11, was a strong predictor of acute stress response to a subsequent national stressor: the Iraq War. Thus, our findings indicate that responses to one stressful event may be strongly related to responses to a prior traumatic event, and suggest that those who responded with acute distress following the 9/11 attacks may be particularly vulnerable psychologically to subsequent terror attacks.

We have also found effects beyond the posttraumatic stress symptoms that are the typical focus of investigations. Many people have reported finding unexpected positive consequences in the wake of the attacks, such as closer relationships with family members and a greater appreciation of the freedoms our country offers its residents. Positive emotions are also prevalent. We believe that a narrow focus on psychopathology and clinical outcomes, while ignoring social benefits and community resilience, can paint a distorted picture of people's responses to traumatic events and hide the fact that most individuals are quite resilient. A comprehensive understanding of the impact of natural and man-made disasters requires considering both negative and positive outcomes.

As I have described, conducting methodologically sophisticated, externally valid research on coping following traumatic events is challenging at best. However, obtaining such data is critical. Obtaining normative information concerning the adjustment process following trauma can aid mental health providers by pointing to potential risk factors, and can inform the design of effective interventions. Inaccurate information circulated in the public domain can be devastating for the victim of a trauma – it can not only lead to a self-perception that one is not coping appropriately, but it can also lead to ineffective support provision by members of one's social network. Methodologically rigorous social science research can help inform preparation for future disasters, including how to communicate risk and evacuation orders effectively. Empirical data can also help identify factors that promote resilience and adjustment to prolonged stress, uncertainty, and loss. Finally, social science research can help policy makers understand how to shape planning and evacuation efforts so that they optimize both short- and long-term mental health outcomes of affected communities. The tragedies of 9/11 and the recent Gulf Coast disasters have had an enormous impact on life in the United States. Hopefully, one benefit of conducting research on such disasters will be more evidence-based predictions and more informed, sensitive, and cost-effective recommendations for the future.

This concludes my testimony. Thank you.

For Additional Information:

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Roxane Cohen Silver, Ph.D. is a Professor in the Department of Psychology and Social Behavior and the Department of Medicine at the University of California, Irvine. She completed her undergraduate and graduate training in Social Psychology at Northwestern University, Evanston, Illinois, and was on the faculty at the University of Waterloo, Ontario, Canada, before relocating to UC Irvine in 1989. A national expert in the field of stress and coping, Dr. Silver is a Fellow of both the American Psychological Association and the American Psychological Society. In December 2003, Professor Silver was appointed by U.S. Department of Homeland Security Secretary Tom Ridge to the nine member Academe and Policy Research Senior Advisory Committee of the Homeland Security Advisory Council. Professor Silver also serves as Director of Graduate Affairs for the Department of Psychology and Social Behavior, the coordinator of its doctoral program in Health Psychology, and the co-Director of her department's NIMH Institutional Training Grant in Social and Environmental Contexts of Adaptation. Previously, Dr. Silver served as the Associate Dean for Research and the Faculty Chair in the School of Social Ecology, as well as the Associate Director of UC Irvine's Newkirk Center for Science and Society.

For the past 25 years, Dr. Silver has studied acute and long-term psychological and physical reactions to stressful life events such as physical disability, death of a spouse or child, childhood sexual victimization, divorce, family violence, war, natural disaster, and human-caused disasters, including the Columbine High School shootings and the September 11, 2001 terrorist attacks. Dr. Silver was recently principal investigator of the only national longitudinal study of responses to the September 11th attacks. The 7th wave of data collection, marking the 3rd anniversary, was completed in fall, 2004; the first report of this study appeared as the lead article in *JAMA: The Journal of the American Medical Association* in September 2002. In her research, which has been funded by the National Science Foundation, the National Institute of Mental Health, and the U.S. Public Health Service (Bureau of Maternal and Child Health), Dr. Silver seeks to identify factors that facilitate successful adjustment to stressful life events. Her work also explores the long-term effects of traumatic experiences, and considers how beliefs and expectations of one's social network impact on the coping process.

Professor Silver is also a dedicated teacher and active mentor of predoctoral and postdoctoral students. In recognition of her efforts toward graduate and undergraduate education at UC Irvine, she has received a number of teaching awards, including UC Irvine's 2001 Distinguished Faculty Lectureship Award for Teaching, the 1999 Chancellor's Award for Excellence in Fostering Undergraduate Research (the 16th recipient in UCI's history), UC Irvine's Award for Special Distinction in Promotion of Undergraduate Research and Scholarship, UC Irvine's "In Celebration of Teaching" Awards for Excellence in Teaching and for Undergraduate Mentoring, the Outstanding Professor Award from the graduating Senior class on two occasions, Professor of the Year from the Social Ecology Student Association, and several Excellence in Teaching Awards from UC Irvine's Order of Omega Panhellenic and Interfraternity Council.