

Coping with Disasters: What have we learned over the past 20 years?



Roxane Cohen Silver, Ph.D.

Professor
Department of Psychology and Social Behavior
Department of Medicine
Program in Public Health
University of California, Irvine

Presentation at Northridge 20 Symposium
Los Angeles, California
January 17, 2014

Characteristics of Traumatic Life Events



- **Random**
- **Unpredictable**
- **Uncontrollable**
- **When a community-based event (e.g., natural disaster): shared experience among many victims**

Program of Research on Collective Traumas



- **Southern California Firestorms
(36 hours – 2 years)**
- **Columbine High School Shootings
(1 – 2 weeks)**
- **September 11, 2001 Terrorist Attacks
(9 days – 3 years)**
- **2006 Earthquake, Yogyakarta, Indonesia
(2 – 3 years post quake)**
- **2010 8.8 Earthquake, Bio-Bio Region, Chile
(3 months)**
- **2013 Boston Marathon Bombings
(2 – 4 weeks; 6 months)**

Common Immediate Responses to Disasters



- Shock, disbelief, and/or emotional numbness (e.g., surprise and a feeling of unreality)
- Fear and separation anxiety
- Emotional distress (e.g., sadness, depression)
- Survivor guilt
- Somatic symptoms (headaches, GI distress, chest pains, nausea, loss of appetite)
- Ongoing memories, thoughts and mental pictures of the event (often intrusive, often avoided, often associated with anxiety)

Common Immediate Responses to Disasters (cont.)



- Sleep disturbance (including nightmares)
- Difficulty concentrating, disorganized thought
- Desire to be close with friends, family, or similarly affected others
- Need to talk about one's experiences
- Relief and a focus on one's good fortune relative to worse-off others
- Altruistic behavior

Possible Short- and Long-term Effects of Disasters



- Psychopathological disorders (e.g., Acute Stress Disorder, PTSD, Major Depressive Disorder, other Anxiety Disorders)
- Generalized distress (sadness, fear, anxiety)
- Intrusive ruminations
- Physical symptoms (somatic complaints; physical health effects of chronic stress)
- Increased health care utilization and cost
- Disruptions in functioning (e.g., work, school, domestic activities, relationships)

Possible Short- and Long-term Effects of Disasters (cont.)



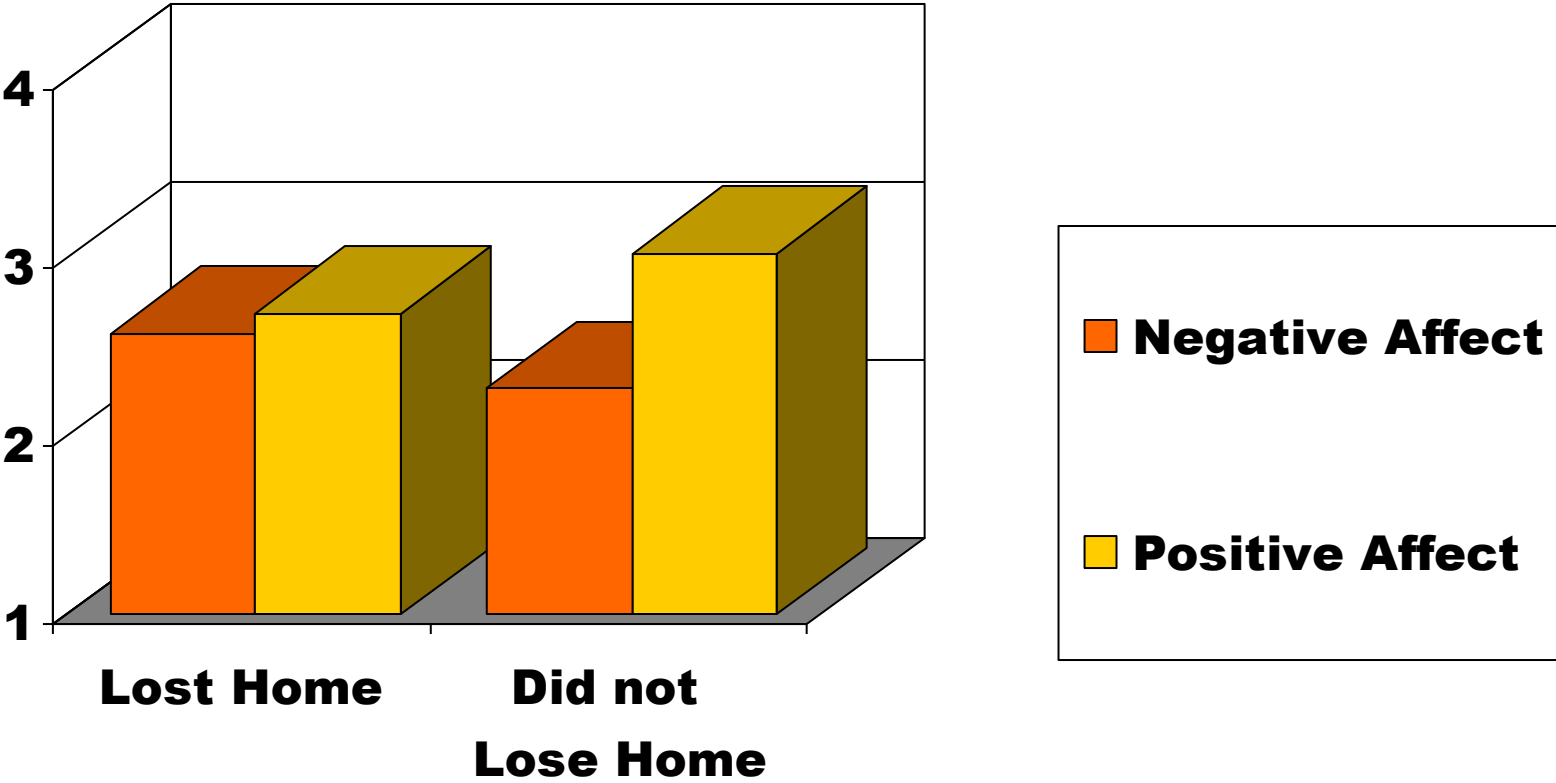
- Decreased positive emotions
- Decreased psychological well-being
- Posttraumatic growth, meaning-making, construal of personal benefits (e.g., changes in personal values)
- Positive community effects (e.g., increased patriotism, altruism, social cohesion, volunteerism)

The Myths of Coping with Natural Disasters

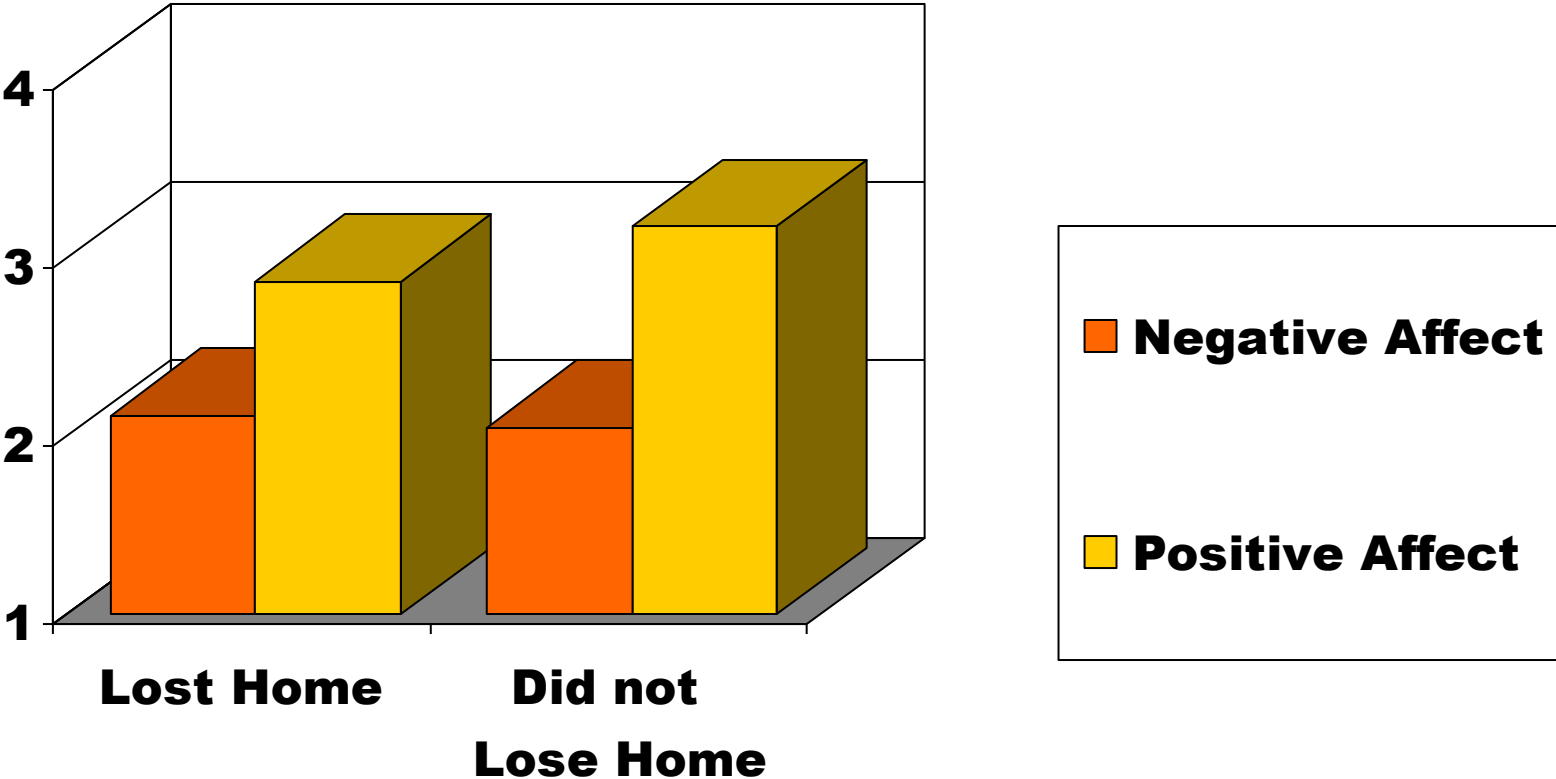


- Psychological responses are predictable; there are universal reactions to natural disasters
- Emotional responses to natural disasters will follow a pattern, or orderly sequence of stages
- Psychological responses will be limited to those *directly* exposed to the disaster
- Degree of emotional response will be proportional to the degree of exposure, amount of loss, or proximity to the trauma (e.g., as “objective” loss decreases, so will distress)

Frequency of Positive and Negative Affect 36 Hours Post-Firestorm



Frequency of Positive and Negative Affect 2-4 Weeks Post-Firestorm



Weighted Percentages of Residents Reporting Probable PTSD in Chile (N=2108)

3 Months post-earthquake

Northern Region	3.0%
Southern Region	2.0%
Central Region	10.8%
Santiago	17.6%
Epicenter	18.6%

Weighted Percentages of Residents Reporting Probable PTSD in Chile (N=2108)

3 Months post-earthquake

Northern Region	3.0%
Southern Region	2.0%
Central Region	10.8%
Santiago	17.6%
Epicenter	18.6%

Predictors of Vulnerability to Disasters



- Demographic factors (e.g., gender, education, income)
- Pre-existing mental health history
- Lifetime or recent trauma history (i.e., increased sensitivity resulting from exposure to a similar collective event)

Percentages of Residents Reporting Probable PTSD by Age Group in Chile (N=2108)

Age Group	3 months post quake
15 - 24	7.2%
25 - 34	9.1%
35 - 44	20.5%
45 - 54	14.5%
55 - 64	32.3%
65 +	11.0%

Percentages of Residents Reporting Probable PTSD by Age Group in Chile (N=2108)

Age Group	3 months post quake
15 - 24	7.2%
25 - 34	9.1%
35 - 44	20.5%
45 - 54	14.5%
55 - 64	32.3% *
65 +	11.0%

Predictors of Posttraumatic Stress 3 years after 2006 Earthquake Yogyakarta, Indonesia (N=428)

	β	<i>p</i> value
Living with Adult Children	-.13	.02
Female Sex	.19	.001
Age	-.13	.02
Loss from 2006 tsunami	.12	.02
Loss from 2006 earthquake	.10	.06

Predictors of Posttraumatic Stress 3 years after 2006 Earthquake Yogyakarta, Indonesia (N=428)

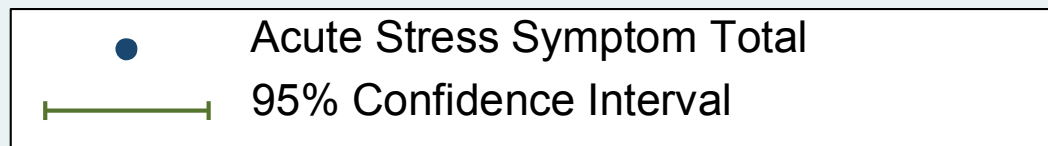
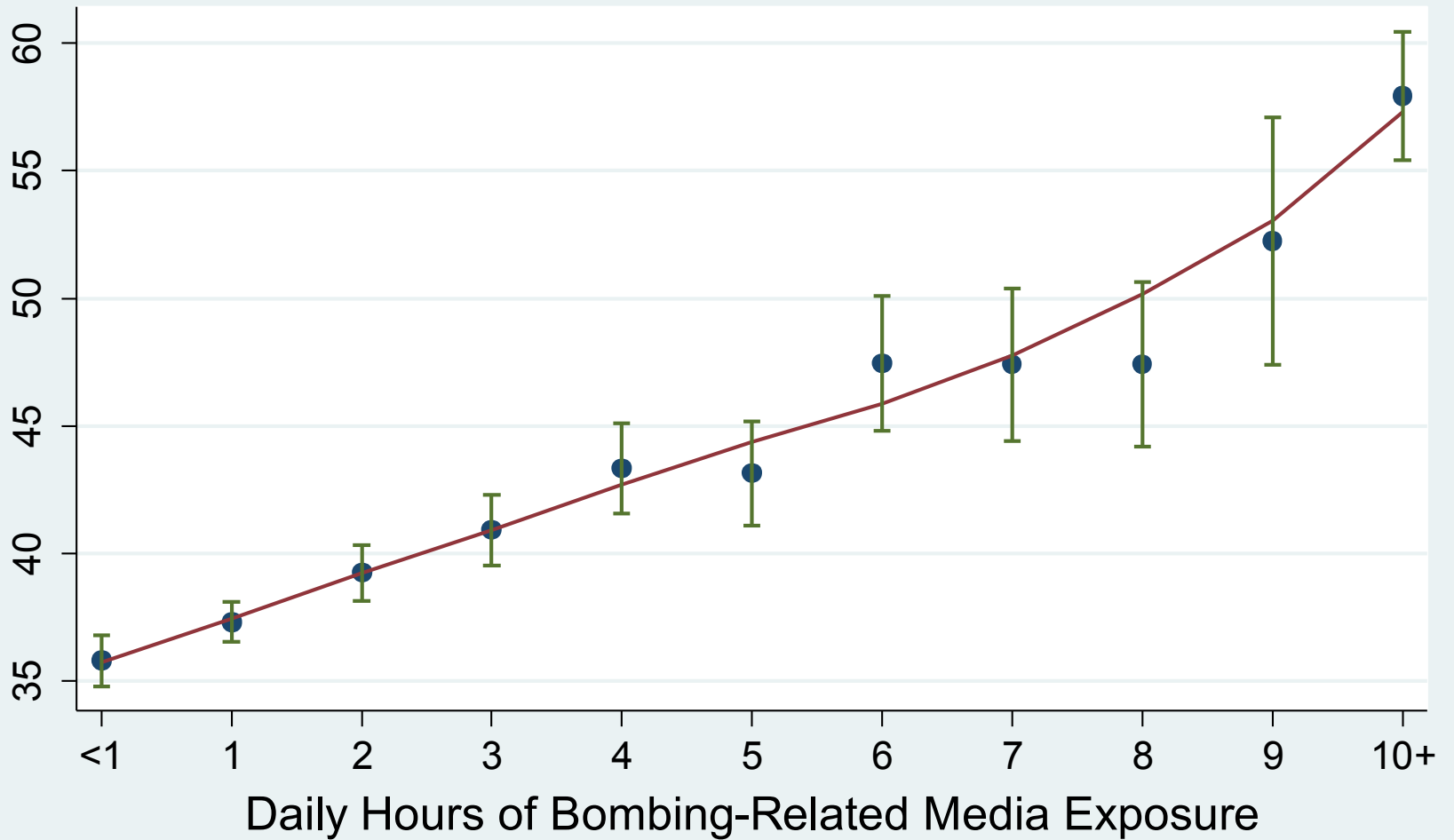
	β	<i>p</i> value
Living with Adult Children	-.13	.02
Female Sex	.19	.001
Age	-.13	.02
Loss from 2006 tsunami	.12	.02
Loss from 2006 earthquake	.10	.06

Predictors of Vulnerability to Disasters (cont.)



- Chronic stress
- Early coping strategies/responses (behavioral disengagement, i.e., "giving up")
- Repeated exposure to trauma (e.g., exposure to graphic images via the media)

Acute Stress Symptoms and Boston Bombing-Related Media Exposure

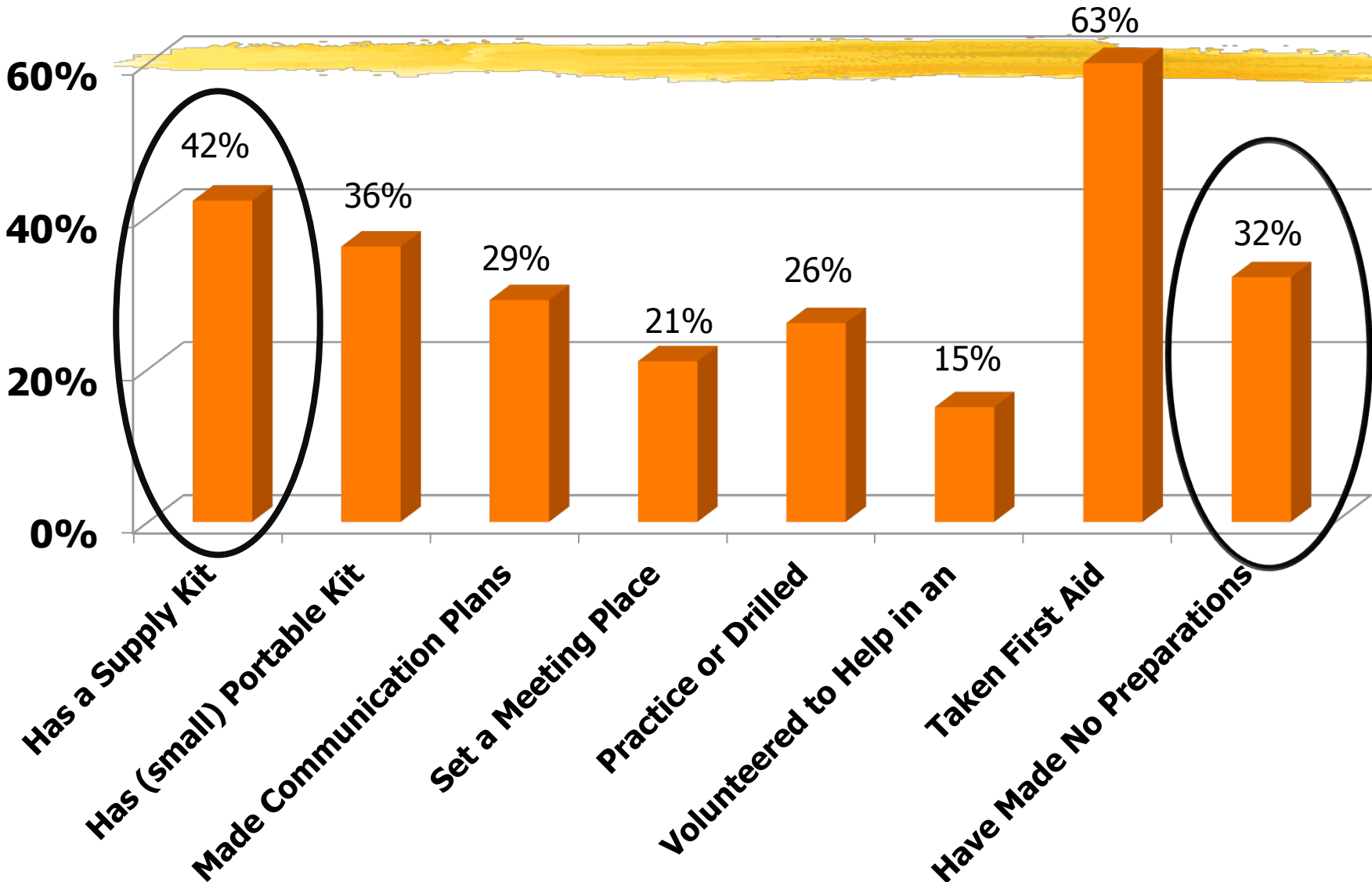


Predictors of Resilience to Disasters



- Inoculation (i.e., benefiting from experience coping with stressful events)
- Pre-existing community support via strong social institutions
- Effective rejection of outsiders and media
- Shared values and community solidarity
- Confidence in authorities

Are Americans prepared?



Who prepares?



- Who gathers supplies?
 - More educated, older age, greater conscientiousness
 - ***Those with prior experience with a natural disaster***
- Who makes plans?
 - More educated, older age
 - ***Those with prior experience with a natural disaster***
- Who practices their plans?
 - More educated
 - Those with children living in the home

Implications for Public Policy



- The importance of being aware of and sensitive to the enormous variability in response to disasters, both immediately and over time
- Recognition that both the physical and mental health impact of a community disaster is likely to go beyond those directly exposed; one should not expect a simple dose-response relationship
- Recognition that after a disaster, communicating about preparing for the *next* one is likely to be most effective



For further information:

Roxane Cohen Silver, Ph.D.
Department of Psychology and Social Behavior
4201 Social & Behavioral Sciences Gateway
University of California, Irvine
Irvine, CA 92697-7085
Telephone: (949) 824-2192
rsilver@uci.edu
<http://socialecology.uci.edu/faculty/rsilver>

Needed Research on Natural Disasters



- Clarifying the time course of psychological response to natural disasters: At what point do “normal” responses become pathological (and therefore warrant intervention)?
- Clarifying the differential impact on those directly vs. indirectly exposed to the disaster
- Assessing the differential impact of natural disasters on special populations (e.g., elderly, children)
- Examining cultural and regional differences in response to disasters

Needed Research on Natural Disasters (cont.)



- Identify factors that influence the perception of risk and the decision to evacuate or stay behind
- Identify factors that influence the decision to settle in a new location or return to one's prior community
- Investigate the role of these decisions on adjustment over time

Needed Research on Natural Disasters (cont.)

- Ideal research is **prospective**, identifying “at risk” samples *pre-event*
- Ideal research is **longitudinal**, with *immediate* as well as repeated post-event assessments
- Ideal research is both regional and national, using **representative samples** of the population under study
- Ideal research is **comprehensive** (small, cross-sectional studies with non-representative samples are inefficient and can provide little new information)