Reflections on Hurricanes and Other Unnatural Disasters

by Jared Orsi, Professor of History, Colorado Sate University

During the 1998 hurricane season I was in Chicago writing a book about the history of natural disasters. I could not help but notice that what was obvious to me—that natural disasters have a good deal of human history behind them—was anything but obvious to the wider public. As the *Chicago Tribune* editorialized, in the face of "nature's most violent displays of brute force," humans "can do little but watch in awe the 'great mischief' of Mother Nature." Two years later, I was living in the tinderbox known as the American West (the book was still not done), when the forests around Los Alamos, New Mexico, burst into flame after a controlled burn by the National Park Service didn't stay controlled. Instead of blaming nature this time, the papers wanted a hanging. "The Park Service should hold its personnel accountable," the *Denver Post* opined. "I find it hard to believe," fumed the Los Alamos congressional representative, "that no one is held accountable. Didn't someone make a mistake?"

As I write today, September 23, 2005, one of the worst hurricanes in history has just devastated the coastal regions of Louisiana and Mississippi, and another severe one is apparently bearing down on Texas's Gulf Coast. Yet again we seek answers: Nature's fury? God's wrath? Malfeasance or at least incompetence on the part of responders—from emergency crews to the President of the United States? Although fingers point in many different directions, these explanations and the responses to the 1998 hurricanes and the Los Alamos fire share one thing: the assumption that something must go extremely wrong in order to produce an extreme tragedy. Nature must do something extraordinarily powerful, or human beings must make extraordinary mistakes. Although seemingly logical and very understandable given the scale of tragedy that results from natural disasters, this assumption is not borne out by historical evidence. It does not take a big and bad cause to produce a big and bad effect.

In the case of Los Alamos, the fire was caused by a complex of unfortunate but unremarkable mistakes and coincidences: the accumulation of ground fuel in the 1990s, the pending retirement of a park superintendent who favored use of fire as a tool in forest management, a drought that portended a bad fire season. All of these ordinary things conspired to add urgency in officials' mind for the need for a burn in the spring of 2000. But there was more: an out of date protocol for prescribed burning that had been mistakenly posted on the internet, small mistakes in the admittedly imprecise science—no, guess work—that goes into estimating fire safety conditions. And then there was the big mistake that came from the invisible problem of combining the wrong protocol with the small errors in the fire safety rating. Add to this a National Weather Service report that never got to park service officials. All of these conspired to lead officials to pick a very bad day for the fire. Finally there was the chaotic patterns of blowing wind and burning flames. Neither predictable, neither controllable. From all these small, ordinary system failures—failures that can happen on any given day without any severe consequences—came a billion-dollar tragedy. The Secretary of the Interior Bruce Babbitt likened it to a series of stones loosened from a mountainside. "Sometimes," he said, "a rock is dislodged and nothing happens, but other times a rock is dislodged and it starts a cascading series of events...[until] you have a landslide at the bottom."

Hurricanes work similarly, though on a much larger scale. First, human beings with short memories and big plans for the future put a lot of stuff in harm's way in the twentieth century. South Florida, for example, enjoyed three decades between Hurricane Betsy in 1965 and Hurricane Andrew in 1992, and during that time, population and property values skyrocketed. This pattern has repeated across the country and around the globe, with the consequence that the severity and frequency of natural disasters has increased steadily since the 1970s. The worldwide price tag

for weather-related catastrophes in 1998 alone topped that of the entire decade of the 1980s. Humans may not cause the wind to blow or the ground to shake or the rain to fall (though even that is increasingly being called into question), but they do unquestionably shape the results that follow whenever the wind blows or the ground shakes or the rain falls.

Next the question is how does all of that stuff get into vulnerable places? The answer is: through countless ordinary decisions and actions undertaken entirely innocently of their impact on hurricane vulnerability. When couples from the frigid upper Midwest dream of retirement on the Gulf Coast, the hurricane risk goes up a little. When the federal government makes home loans or finances highway construction in South Florida to promote economic growth or reward political support or whatever, the hurricane risk goes up. When coastal boosters advertise sunshine, boating, and golf but neglect to mention the periodic evacuations, the hurricane risk goes up. The truth is there is a system in place, a system that has no designer or controller but plenty of participants. It is a system that rewards people for putting themselves and their property (and other people and their property) in dangerous places. These rewards are short-term but significant—return on investment, a nice vacation, insurance policies, a monthly paycheck, a government contract, a home loan, re-election. Most of the time it works safely, as people seeking these rewards retire, build, buy, and advertise. Each action is rational and carries no negative consequences for the actor. In combination, however, they are deadly. Like the rocks cascading down Babbitt's mountainside, they are individually benign, but in combination they put people in severe danger.

The last step in making a hurricane or any other natural disaster is the distribution of its effects. Women and children die in greater numbers than adult men in Third World earthquakes because they are disproportionately likely to be in homes and other poorly constructed buildings; adult men are more likely to find themselves in workplaces, government buildings, and other more solid structures when the ground shakes. Poor people have a harder time evacuating in the cases of floods and hurricanes because they lack good access to transportation and the extended social networks that allow them somewhere else to go. Even in something as simple as a heat wave, elderly people living alone invisibly roast to death in unairconditioned apartments and public housing units, cut off from family, friends, and neighbors, sometimes having locked the doors and windows for fear of danger from their crime-infested surroundings. None of this is to deny the real and widespread suffering of middle- and upper-class people in the aftermath of disasters. Nor is it to suggest that anyone deliberately discriminates against these least among us such dire times. But it is inescapable that disasters are

Books on topics related to this article:

John Barry, *Rising Tide: The Great Mississippi Flood of 1927 and How It Changed America* (Simon and Schuster, 1997).

Kenneth Hewitt, ed., *Interpretations of Calamity from the Viewpoint of Human Ecology* (Allen & Unwin, 1983).

Ari Kelman, *A River and Its City: The Nature of Landscape in New Orleans* (University of California Press, 2003).

Jared Orsi, *Hazardous Metropolis: Flooding and Urban Ecology in Los Angeles* (University of California, 2004).

John McPhee, *Control of Nature* (Farrar, Straus, Giroux, 1989).

Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (Basic Books, 1984).

Ted Steinberg, *Acts of God: The Unnatural History of Natural Disaster in America* (Oxford University Press, 2000).

Diane Vaughan, *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA* (University of Chicago Press, 1996).

not equal opportunity killers. The people who are the most vulnerable every day of the year are also the most vulnerable in times of catastrophe. In that sense, we humans may not cause the wind to blow, but we do determine who gets hurt the most when it does.

And when it's all over? First, we care. Federal money and charitable generosity flow freely. The American heart opens graciously and embraces those in need. Here is often when we are at our best as a society. Then, we repeat. So many people are so dependent on the ordinary system that it is inconceivable not to repair it. The ordinary has broken down, but in the face of the extraordinary, we can think of little else than restoring the comfortable, the familiar, the deadly. And so federal money and private generosity rebuild homes and other structures in dangerous places. We return to marginalizing poor neighborhoods and isolating the elderly. In the process of nobly rebuilding the best of what has been damaged, we also rebuild its dark sides as well. Finally, we forget. Years or decades elapse between cat-5 storms, 7-point earthquakes, and hundred-year floods. We advertise dangerous places. We weaken or evade building codes, hazard zoning ordinances, and other nuisances of doing businesses. We demand lower insurance rates. And then....

The *Trib* was wrong: there is plenty we can do in the face of the brute force of Mother Nature. Still, it is hard to write that on this day. Hard to write about the ordinary in the face of the extraordinary. Hard to write about innocent decisions of the past while people are hungry, homeless, and grieving. Hard to write about the lessons we should learn from one hurricane while another is already threatening. I do pray that we learn those lessons—that natural disasters are very much of our own making and that we make them through the ordinary decisions and actions of our lives, decisions that we have much control over. But I pray that it does not take a second hurricane in one month to teach us.

Louisiana WRRI Studied New Orleans Inundation

The web pages of the Louisiana Water Resources Research Institute provide a glimpse into the scholarship surrounding hurricanes and the impacts of landfall. Of particular interest are projections of the impacts of flood inundation of New Orleans during hurricane. These and a variety of other resources which were developed for LWRRI under the directorship of Joseph Suhayda (retired) are available from the web page at www.lwrri.lsu.edu and www.lwrri.lsu.edu/1998_2002WEB.htm.

EPA Website Now Offers Water Quality Data

In Feburary, the Environmental Protection Agency - Office of Water, released the first ever interactive database of state water quality assessment data, which provides the public with easy Web access to water quality information at the state and local levels. The 2002 reporting cycle was a transition period between traditional 305(b) water quality reporting and integration of 305(b) with reporting of impaired waters under section 303(d) of the Clean Water Act, as outlined in EPA guidance to the states in November 2001. EPA is continuing to call for integrated reporting of 305(b) and 303(d) information.

States are participating in an extensive review and approval of the 2002 data. This initial Web release of the 2002 National Water Quality Database summarizes electronic data for 32 states. The remaining states should be added to the database by late summer 2005. National summary water quality statistics will be available at that time. The database may be viewed at www.epa.gov/305b/2002report and if you have any questions, please contact Cary McElhinney at mcelhinny.cary@epa.gov .