

# Chicago Tribune

THE DANGERS OF IGNORING THE EVIDENCE A HURRICANE'S CHALLENGE

**Time, tumult and the science of survival**

## **Is American civilization smart enough to recover?**

**By Gary M. Feinman and Christopher T. Fisher**

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From the millennial perspective of archeology, episodes of collapse -- settlement abandonments, dramatic regional shifts in power and population, and even cataclysmic events--are a regular feature of humankind's global history. In his recent book, "Collapse," Pulitzer Prize-winning author Jared Diamond catalogs cases of what he terms "ecocide." These are unintentional episodes of ecological catastrophe through which past societies have degraded their environment, thereby precipitating social disintegration and demographic decline.

A key point of Diamond's comparative analyses is the recognition that many past episodes of societal decline were caused by a complex web of natural perturbations, such as climatic change or environmental calamity, and anthropogenic or human factors, such as poor responses to initial challenges, that often played off each other for decades, if not much longer. Of course, the final chapters of the storm that hit New Orleans have yet to be written. Every effort toward saving lives, ending suffering and rebuilding the Gulf Coast region should be undertaken as quickly as possible. We desperately hope that when future histories are penned, they will tell tales of New Orleans as the epitome of economic renewal, demographic rebirth and vitality.

Nevertheless, when we read headlines that question whether the recent catastrophe was natural or human-induced or witness the political blame game over bungled responses to Hurricane Katrina, we believe that it is also important to take a step back. From a longer-term perspective, the disaster along the Gulf of Mexico is one that hauntingly reminds us of cases of past societal change and collapse. In such situations, the challenges of the environment repeatedly were not met and human decisions often exacerbated an initial ecological challenge. The results were disasters far worse than the initial damage or threat caused by nature.

We believe that to truly understand the present horrific events it is necessary to take a long-term perspective and consider the interplay of human decisions, environmental change and unintended consequences that led to the Katrina disaster. Unarguably the scope, severity and broad reach of the Gulf Coast cataclysm make it one of the worst natural calamities in U.S. history. But in the history of our human species such catastrophic or even collapse episodes are de rigueur. All great powers eventually collapse and lose influence, sometimes slowly, sometimes overnight.

For the Maya, dense populations, frequently led by self-aggrandizing rulers, in a tropical environment contributed to a series of collapses and reorganizations over millennia. In Norse Greenland circa 1300 to 1450, maintaining a European agricultural way of life in a subarctic environment led to the eventual collapse of colonies, perhaps precipitated by increasingly cold conditions. In other instances, such as in ancient Mesopotamia and for the pre-Columbian

Hohokam of southern Arizona, ways of harnessing water had to be renegotiated due to natural and human-caused environmental change, resulting in episodes of collapse and reorganization.

### **Falling into patterns**

Although the demise of every civilization is in certain respects unique, there are striking similarities in causal processes and human response. Many believe that human societies, having become fixed in their responses to continual ecological and social change, lose the ability to react or adapt to crises outside the scope of shared memory. They become less resilient to destabilizing change through continual small-scale, short-term solutions to large-scale problems. Environmental catastrophes in this view are really communication failures between elements of societies tasked with solving problems.

One lesson from this work is that in our effort to achieve sustainable solutions to modern problems we must leave room for the unintended and the unexpected. We must develop solutions that are flexible enough to react to the unforeseen and that by examining past records of human change we can get some idea of the form that these large-scale cataclysms may take. At the same time there are some broader questions that should be addressed. Are we witnessing the start of our own collapse? What can we do to stop it?

### **Case study: New Orleans**

The history of New Orleans, the cataclysm that is Katrina and its aftermath are a prime example of the resilience phenomenon. This tragedy has deep roots, perhaps extending back to the founding of the city on delta land best suited to sea-borne commerce and the early attempts by the Army Corps of Engineers and others to stop flooding. A 1927 flood led to the profound rebuilding of the original levee system, meeting a desire for stability. Meanwhile in the following decades New Orleans sank or subsided as the delta region was not replenished by the alluvial sediments formerly brought by annual floods. As New Orleans sank, it also became more vulnerable because of the loss of coastal marsh and barrier islands, as well as the increased urbanization of rural areas.

In recent years, decreased federal funding for the levees curtailed short-term quick fixes and longer-term planning alike. At the same time, global warming enhanced the likelihood of major hurricanes. Through short-term thinking and politically influenced decisions, resources were not allocated for the strengthening of the levees despite these ominous signs, ignoring the lessons that might have been learned from science and history.

If we are to see New Orleans return and are to avoid repeating the collapses of the past, then we must pay attention to history and science. We must integrate this knowledge into our policies. Only then do we have a chance to escape what the global record of humankind tells us has happened over and over again. People in the past have faced aspects of the problems that we face today--sometimes with success, sometimes with catastrophe--and this record can provide real world, contemporary solutions. There is no need to reinvent the wheel, nor should we ignore the rich knowledge that generations of scholarship have given us. The alternatives are simply too awful to accept.

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