

IN A MATTER OF MOMENTS, NATURE'S WRATH CAN FOREVER ALTER EVERYDAY LIFE: FLOODS, EARTHQUAKES, TSUNAMIS, AND OTHER NATURAL DISASTERS BRING DEATH, DESTRUCTION, DISPLACEMENT. PITT'S LOUISE COMFORT IS NO STRANGER TO DISASTER. IN FACT, SHE'S COMPELLED TO FOLLOW IT AROUND THE WORLD, CONFRONTING THE MANY FACES OF CATASTROPHE.

AFTERMATH

WRITTEN BY BARBARA KLEIN ■ PHOTOGRAPHY BY HARRY GIGLIO

Making sure her seat back and tray table are in their upright and locked positions, the petite woman braces herself for what she hopes is a smooth landing after a long flight across the Pacific. Getting from Pittsburgh, Pa., to Kobe, Japan, is a 24-hour process, with intermittent cab rides, security checks, connecting flights, and delays. With each trip, there's always a lot of waiting, yet there's rarely time to rest. But the traveler, Louise Comfort, wouldn't rest even if she could. There are people to see, sites to visit, decisions to be made. Comfort knows a lot about decision-making, particularly during chaos. She's a woman intimately familiar with disaster.

This excursion to Japan is strictly business—the business of earthquakes or, more accurately, how people, communities, and governments respond to them and the furies they unleash. On this trip in October 2011, the smiling faces that greet her as she goes in search of her luggage in Itami Airport belie the physical and emotional shock waves that still dominate the landscape in Japan ever since a 9.0 quake hit at 2:46 Pacific Meridian time on the afternoon of Friday, March 11, 2011.

The Japanese earthquake originated deep within the Pacific Ocean floor near the northeast coast of Honshu. It was felt in Tokyo, hundreds of kilometers to the south. Fewer than 40 minutes later, a massive tsunami, 20 to 30 meters high, pushed inland, engulfing whole towns in northeast Japan. The giant wave also triggered a crisis at the Fukushima Daiichi nuclear plant, which lost power and the critical ability to keep its nuclear reactors cool enough to prevent a catastrophic meltdown. Aftershocks, fires, power outages, and the threat of deadly nuclear contamination continued for weeks.

The numbers, in terms of lives lost and lives disrupted, are staggering. So far, nearly 16,000 people are among the dead and more than 3,600 are still missing. For the 80,000—some survivors living within a 12-mile radius of the Fukushima plant, their homes are still off-limits because of debris and radiation contamination. Even now, no one knows when these residents will be allowed to return, if ever. Then there's the physical damage to roads, to buildings, to businesses, to entire towns. Millions and millions of tons of debris are a persistent reminder of the cleanup and rebuilding yet to be done. How do people cope with such life-altering devastation?

Comfort—a Pitt professor of public and international affairs—has no delusions about what she's getting herself into. After all, this isn't her first earthquake. That distinction goes to the Mexico City earthquake of 1985, magnitude 8.1, which left about 10,000 people dead, many homeless, and tons of debris in the city's streets. Since then she has traveled to El Salvador, Ecuador, Haiti, Turkey, and elsewhere—a total of 14 different countries and 18 different earthquakes.

Although the Japanese event marks number 18, her goal is essentially the same now as it was more than 25 years ago. She seeks to decipher what went right and what went wrong during the ensuing moments, hours, and days of the crisis, specifically to improve future disaster responses wherever they may be needed.

Comfort seems more the kindly professor than the intrepid earthquake detective. But her eyes shine with a fierce intelligence, acquired

through years of experience as a witness to disaster and a scholar of aftermath. Her fascination with catastrophes began in the turbulent 1960s.

She earned a master's degree in political science at the University of California, Berkeley, in 1960, then spent a year abroad before returning to the United States to enter Yale University's doctoral program. After completing her PhD course requirements in political science, she returned to California while finishing her Yale dissertation, spending a lot of time in the UC Berkeley library on a campus that was at the epicenter of the era's unrest.

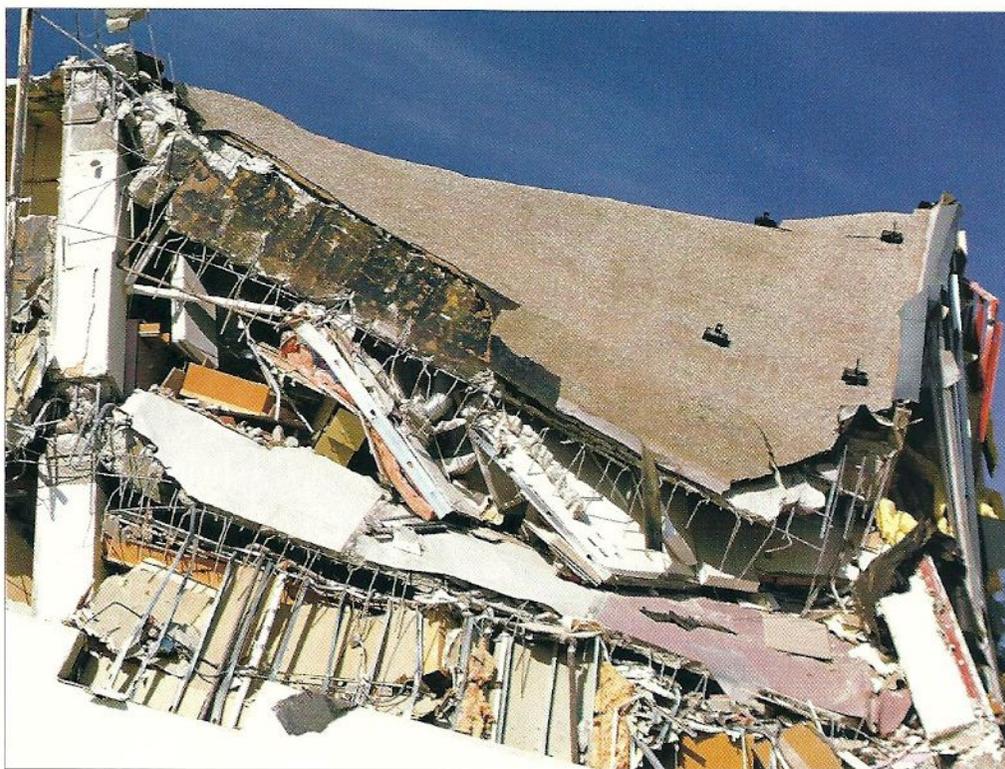
During that time, she says, she got a "front row" perspective on the demonstrations, controversies, and political action at Berkeley in response to the powerful movements demanding free speech, civil rights, women's rights, and an end to the Vietnam War. In response, she adds, there were decisions being made that fell into the category of "what-made-you-think-that-was-a-good-idea"? The era's events left a lasting impression. She was struck by a question: "How do you figure

out the right decisions in life-and-death situations?" That question has been the catalyst for her career as a disaster expert.

In 1975, shortly after completing her doctoral degree, she began teaching at San Jose State University, where faculty members, as part of the California State University system, were required to declare a public-service area as part of their teaching obligation. Because a splinter of the Hayward Fault ran through her backyard in Oakland, Calif., Comfort chose emergency management services.

In seminars in the master's program in public administration at San Jose, she taught police lieutenants and fire captains who wanted to learn more about developing emergency plans and preparing for disasters. Her tools included her academic expertise in organizational theory, complex adaptive systems, policy analysis design, and program implementation and management.

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She also responded to requests for assistance from cities and counties in California in developing their emergency plans and evaluating their preparedness exercises. Through these experiences, the teacher learned from her students how important decision makers are in mitigating loss before, during, and after calamity occurs. Her research has shown that disaster events could be lessened through more awareness of potential risks, a better understanding of the science underlying hazards, and an improved capacity for collective action to reduce risk.

"Risk is a constant element in any society," says Comfort, "and learning to manage it with informed insight is a shared responsibility for the entire society." This is particularly true, she says of local, state, national, and international government officials. "I believe it is the quintessential responsibility of government to prepare the response to disasters," says Comfort. "It is the civilian equivalent of going to war."

Today, Comfort is the General Patton of international disaster-relief operations. As director of Pitt's Center for Disaster Management in the Graduate School of Public and International Affairs, she arms individuals, agencies, and governments with the tools to prepare for and then adapt to changing conditions on the ground when disaster strikes.

At first, the mind can't quite comprehend what it's seeing. Ships, train cars, trucks, and automobiles are strewn about like a scene from a surrealistic painting. Mountains of debris cast ominous shadows, while concrete foundations are left to support ... nothing. This is what Comfort encounters during her initial visit to Japan in the wake of the 9.0-magnitude earthquake and the massive tsunami that followed.

After arriving in Kobe, she joins forces with Aya Okada, a graduate-student assistant in Pitt's Center for Disaster Management, which aims to educate and train future generations of disaster specialists. For Okada, this trip hits close to home, literally. She was born in Fukushima, and members of her family still live here, or at least they did. Some relatives were ordered to evacuate, others chose to leave on their own. Thankfully, she says, everyone in her family survived.

During this visit to Japan, the two negotiate their way through the hard-hit coastal communities where they witness the nightmarish reality that is now day-to-day life. For those who survived, the misery is still raw. Transportation remains crippled, schools and businesses are destroyed, and pollutants still seep into the ground and ocean, affecting the food-supply chain. It is

difficult for families as well as whole communities to regain their footing.

Comfort and Okada spend the next several days talking with local town officials and first responders. Having Okada at her side helps Comfort, who speaks only a bit of Japanese, interpret the subtleties and nuances of people's emotions—from anger and betrayal to dignity and courage. It is through each individual story that they begin to piece together the big picture.

What emerges from this type of on-the-ground research in Japan and at other disaster sites are policy recommendations and new ways of looking at age-old problems. Some of that information has been compiled into numerous books Comfort has authored or coauthored with titles like *Designing Resilience: Preparing for Extreme Events* and *Managing Crises: Threats, Dilemmas, Opportunities*. She also has written many scholarly journal articles on a range of disaster topics, from flooding in Pittsburgh, to Hurricane Katrina in New Orleans, to the aftermath of the catastrophic 2004 earthquake and tsunami that devastated parts of Thailand and Sumatra.

In any emergency situation, says Comfort, information and knowledge are key. The more knowledge, the better. People generally don't panic, she adds—they simply want the facts necessary to make their own decisions. "One of the most damaging things government officials can do," she says, "is pretend to know what they don't."

In Japan, for instance, the government was better prepared than many others, but it didn't envision the cascading series of events that happened—a massive earthquake, then a massive tsunami, then a massive nuclear crisis.

That's why Comfort supports a robust interdisciplinary approach to disaster planning and management, including an integrated team of seismologists, meteorologists, geologists, communications experts, engineers, community leaders, and government authorities. Even when such a dream team is in place, its success depends on its ability to maintain clear lines of communication between government agencies, relief groups, and on-site personnel so that all response and recovery efforts can be most effectively coordinated.

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Every year, there are about 100 damage-causing quakes, which makes them a reliable disaster to study. Where there's a major earthquake, chances are Comfort will follow. What she learns after each event helps her to offer improved strategies to the next group of officials, citizens, and communities caught together in a web of disaster somewhere in the world.

Among her key research findings is that preventing or lessening catastrophe is a matter of design. "We can't stop earthquakes, hurricanes, or floods, but we can design communities that are resilient to risk," says Comfort, who points to possibilities like locating critical structures at less vulnerable sites, stepping up risk education, investing in communications infrastructure, and developing improved plans to manage risks.

"The greatest resource in any society for reducing risk is people," says Comfort. "People can learn and change their actions accordingly to create safer, less vulnerable, more resilient communities."

Another lesson is that the human universality of these events does not translate into a single, universal reaction to them. Instead, she says, there are distinct cultural differences in the way people respond to and interpret risk. And those differences exist within, as well as across, nations.

Still, Comfort has found commonalities in the aftermath of tragedies. Not surprisingly, one shared result is grief accompanied by a heightened sense of physical and emotional vulnerability. From there, people eventually tend to acknowledge that a cataclysmic event also acts as a mechanism for change. Only when that desire for change is transformed into a working strategy does the recovery process truly begin.

Back in October, Comfort and Okada climbed up damaged sea walls and tramped over rubble to initiate conversations with people still trying to find their way back to a "normal" that no longer exists. In fact, says Comfort, there's no getting back to "normal." One can't undo what has happened. But when utility services are restored, when businesses reopen, when buses and trains run again, these are the signs that a stronger, more resilient community will emerge and will endure. ■