1

Introduction: Crisis and Collaborative Resilience

Bruce Evan Goldstein

This book originated in response to the Virginia Tech murders of Monday, April 16th, 2007. As a member of the university community, I observed how our response to this horror promoted global solidarity that supported our grieving while resisting other, more divisive framings of the tragedy. Such a constructive response to the shootings was the catalyst for a symposium that I organized a year later. Twenty-five researchers from planning and natural resource management were invited to Virginia Tech to discuss how collaboration in its many forms could promote resilience to crisis.

The resulting essays, collected in this book, consider the topic of collaborative resilience. We seek to answer if resilience can be cultivated among communities that face a wide array of challenges, including legacies of violence, collapse of timber and fisheries industries, and the impact of climate change. These essays explore how various collaborative processes can foster intentional communities as participants exchange ideas, stretch assumptions, and develop greater self-awareness. Chapters tackle the challenges of creating safe spaces in which people can learn together and reinvent their communities, even in complex circumstances that can be threatening and disruptive to social practices and relationships. In addition, you will read about how to aid communities in framing a common understanding of crisis, cultivating new forms of knowledge, identity, and governance that can enable far-reaching changes.

The Virginia Tech massacre inspired and defined the main themes of this volume. But even before the tragedy, planning and natural resource scholars had begun developing a shared interest in the notion of resilience as a basis for crisis response. Both fields have much to offer in helping communities develop what I call "communicative resilience." The essays in *Collaboration for Resilience* show the ways in which people in crisis collaborate. Herein are the stories of communities that have survived and thrived through adaptive consensus-building and transformative social

change, altering assumptions, behaviors, processes, and structures for the greater good.

Unity in the Face of Crisis

On the day of the massacre, I was off campus preparing for a class; I was a professor in the Virginia Tech Urban Affairs and Planning program. Between 9:00 and 10:00 AM, student Seung-Hui Cho shot more than 50 people in the classrooms of Norris Hall, killing 27 students, 5 faculty, and then himself. I did not know those killed or wounded, but I grieved for them.

In the aftermath of that horrific event, I struggled to understand why the shootings occurred and how the community should respond. Other people likely were asking themselves the same questions, because crises do not come with a ready-made frame of reference. Even the Holocaust initially lacked a common narrative framework or distinct place in collective memory in the decade after the Second World War, when many survivors were stigmatized and silent (Mintz, 2001).

Has Virginia Tech recovered? I think that the school has recovered, but not just from the passage of time. The people had to intentionally *unify* in order to recover, heal, and to function again. They had to face an act that attacked the essence of what the university is and does. The killing of faculty and students in classrooms violated the trust and openness that allows a university to operate. It threatened the school's ability to maintain a safe space so that students can encounter ideas of all sorts, learn, and grow.

Ten thousand people attended a convocation at Cassell Coliseum the day after the shootings. Students organized a memorial vigil that night on the Drillfield in the center of campus. Classes were canceled for the remainder of the week, and most students went home to be with their families. While they were away, I asked my students to respond on a class Webblog to this question: "Did campus memorial events help you connect with others and help heal the rift that this disaster has created in our community?" Here are some of their responses:

Just the day before, I stood at the same spot on the Drillfield, as people yelled at me to turn around and run. The candlelight vigil restored my perception of the campus as a 'safe place.' Knowing that we were not alone was powerful.

The amazing thing about the love and friendship and support we shared is that it trumps the anger and hate which started this tragedy. I wish Cho could see that as a community we have not dissolved into bitterness, that hate does not beget hate.

It suggested that people are bound up with one another, sharing, despite differences, a common identity. That is why we wore orange and maroon. That is why we yelled 'Let's go. . . Hokies' together. With all our sadness, anger and fear, we needed this time to be together and to be around our fellow students, because we are the only ones who understand how we feel.

When students returned the following week, I invited Andy Morikawa, who directs the New River Valley Community Foundation, to join my Community Involvement class for a roundtable discussion. Andy described how his Japanese-American family was forced into internment camps during WW II. He told them how he had fought with bitterness, joined the Peace Corps, and devoted his life to building community. Thousands of other conversations took place that week in and out of classrooms, as we all tried to understand our relationship to the tragedy and develop a collective sense of what mattered and what needed to be done. Virginia Tech sociologists John Ryan and James Hawdon (2008) describe the shared frame of reference that emerged during this time. People began to understand that the shootings were an isolated incident, carried out by a mentally ill individual who held himself apart from the contact and interaction that defined the community. As Ryan and Hawdon (2008) explain, people came to these conclusions:

• This act could not have been foreseen or reasonably prevented.

• The surviving members of the university community were not responsible for this event.

• This was an attack not just on the victims, but also on the whole community.

• Everyone was victimized by what happened.

• The effects on the community will be devastating and long lasting, but the community will prevail.

• The whole country—and indeed the whole world—is watching and supporting the community in its grief.

Thus people judged the attack as being carried out against their entire community. They responded in a way that was dignified, unified, brave, and composed (Ryan and Hawdon 2008). In turn, their solidarity promoted support throughout the world.

Although unity often follows tragedy or disaster, solidarity is not always the case, and not always to the same degree (Carroll et al. 2006). For example, national solidarity with the people of New Orleans in the aftermath of hurricane Katrina (in August, 2005) was tempered by sensationalized initial coverage of violence in the Super Dome shelter and

looting in the streets. Although accounts of the dignity and bravery of rescuers and residents were plentiful, the community as a whole was not associated with these characteristics, and this situation made national solidarity more equivocal.

Just as in New Orleans, the national media was eager to share stories that might have fostered less solidarity with Virginia Tech. Some journalists sought to identify who was to blame for the shootings. They asked why the campus had not been locked down earlier, and how Cho was allowed to reach his senior year without medical or disciplinary intervention. Some people adopted this blame-framing of the story, including, most visibly, parents of some of the students who were killed, overwhelmed as they were by grief and a sense of violated trust. To this day, a few people continue to pursue legal action aimed at securing a clear target of blame or pathway to accountability.

However, many of those closest to the victims did adopt the shared frame of reference, for example, horticulture professor Jerzy Nowak. Cho killed Jerzy's wife, Jocelyne M. Couture-Nowak, while she was trying to defend her French class. Jerzy wrote a heartbreaking account of learning of her death, of how he told his young daughter, and of how he handled the aftermath (Nowak and Veilleux 2008). Jerzy did discuss his delay in learning of Jocelyne's death and his difficulty in navigating some aspects of campus bureaucracy. Nevertheless, Jerzy reserved his contempt for "snooping journalists" and their immediate and relentless efforts to get material for their "ready-made scripts accusing the VT administration of neglect." He concludes, "The compassion and support that we have received from our community, including co-workers and university colleagues, are so unique that I never considered leaving Blacksburg." Building on this support network, Jerzy created the Virginia Tech Center for Peace Studies and Violence Prevention (http://www.cpsvp.vt.edu/). This center became a cosponsor of the symposium that led to this book.

Beyond the Intrinsically Resilient University

Virginia Tech's swift response was spontaneous. The shootings were an unexpected assault, one that focused and motivated the school to engage in collective deliberation and coordinated action. Anthropologist S. M. Hoffman (1999, 140) has widely studied disasters (as well as dealing with the loss of her house in the 1991 fire in Oakland, California). Hoffman says that after the initial shock of the disaster and social atomization, "an aura of purpose, almost a higher purpose, arises and immerses victims."

These words certainly do describe Virginia Tech; drawn together, the university community engaged in open and honest dialogue. They began to forge a common narrative that became a source of strength and solidarity. This common narrative enabled them to reject divisive stories that others wanted to tell about the tragedy. Our ability to tell our own story promoted resilience, and we quickly restored our ability to be an effective learning community.

I suspect that universities have an intrinsic capacity to respond to crises. They are ever-renewing community; people remain in close proximity and they have common experiences and loyalties that develop trust. They share a "language" and ways of interacting. The very intention of a school is to promote cooperative interaction that fosters student learning. As such, students can reinvent themselves within the society of the wider world.

Conditions are rarely so conducive, as at a school, to collaborative engagement in response to a crisis. Nor are all crises as clearly identifiable or immediate as the Virginia Tech shootings. In some crises, threats may have multiple causes or operate at multiple scales. There are those threats that combine social and ecological features. A crisis can be slow to build, episodic, loom in the distant future, or have occurred in the distant past. The circumstances leading to crisis may be complex and indeterminate, and thus the ways to recovery may be difficult to comprehend or beyond human ability to pursue.

When a crisis occurs in a neighborhood, region, or state, these societies (unlike a school) may not share a common language, habits, or interests. Communities riven by hostility or distrust may interpret crises in disparate ways, so that even discussing an issue can be emotionally and cognitively taxing, as well as personally and professionally threatening. These are the tough cases. A group may need to build a capacity for communication before it can even begin to engage effectively. Responding to crises may require challenging closely held institutional and normative commitments.

I organized the 2008 symposium at Virginia Tech for us to consider how collaboration can promote crisis resilience in the tough cases: when crises are complex, when communities lack cohesion and capacity, and when resilience may require system transformation instead of merely recovery. I was inspired by the unity that I saw after the shootings. I wanted to explore how different collaborative designs and approaches to facilitation might catalyze the collective energy and purpose that is released during a crisis (before it is possibly eclipsed by helplessness and hopelessness). I discovered that this area of inquiry has been relatively unexplored; most efforts to anticipate and respond to crises have focused on enhancing

top-down managerial capacity (e.g., Fukuyama 2007), and such efforts do little to promote broader participation and collaborative engagement. But in the past decade, collaborative resilience has attracted the interest of scholars within both Natural Resource Management and Planning. These were fields of most of the symposium participants. They brought distinct assumptions that complement and challenge each other as they debated strategies for promoting resilience to crisis.

Crisis and Convergence

In both the fields of Natural Resource Management and Planning, interest in increasing resilience to crisis through collaboration began a half-century ago. What initiated this interest were threats to the legitimacy of both fields, an unexpected consequence of their longstanding faith in managerial acumen and scientific expertise.

For their part, natural resource managers were confronted by the depletion of seemingly inexhaustible fisheries stocks, including cod in Atlantic and pollock in the Pacific. Systematic efforts to suppress fire had led to more than a hundred million acres of biologically impoverished, fire-starved forests in the United States. These failures to optimize resource flows grew from their mechanistic perspective. They had thought that nature was composed of parts that could be redesigned, discarded, or exchanged to fine-tune outputs for optimal satisfaction of human wants and needs (Botkin 1990; Worster 1994).

Likewise, planners' faith in reason and expert guidance underlay the regrettable urban renewal programs of the 1960s and 1970s, which displaced vibrant communities and produced great suffering. Urban renewal produced the permanent "root shock" of displacement, an impact that continues to affect communities decades after their removal (Fullilove 2004).

These crises initiated a period of self-critique, and both fields embarked on a path to self-renewal. Within planning, the story of our redemption begins with Jane Jacobs's (1961) communitarian vision of the "Death and Life of American Cities." Planners urged each other to start listening to the people for whom they were planning. Initially they used client-centered "advocacy planning." Later they used a facilitated, collaborative process that enabled stakeholders to understand each other's interests and resolve conflict through consensus (Susskind 1987). As collaborative planning developed, scholars began investigating how trust and interdependence acquired by stakeholders could not only resolve disputes but also transform

adversarial relationships and catalyze new institutions. Such connections could heal root causes of conflict (Booher and Innes 2002; Healey 1997). They could address social and ecological crises that played out over both long time scales and across multiple spatial scales (Innes and Booher 2010; Margerum and Whitall 2004).

Some natural resource management scholars questioned the assumed natural equilibrium that underlay strategies to optimize resource outputs. These scholars adopted insights about nonlinear system dynamics and feedback processes (Botkin 1990; Levin 1999). They embraced adaptive management, an iterative and precautionary practice (Gunderson, Holling, and Light 1995; Holling 1978). Scholars explored, too, the possibilities of broader participation, drawing inspiration from Ostrom's (1990) work on common property resource regimes as an alternative to a "tragedy of the commons" (Hardin and Baden 1977).

Social-ecological resilience lies at the juncture of this new scholarship in resource dynamics and institutions. The concept emphasizes the capacity to absorb stress and reorganize (as opposed to seeking the highest degree of efficiency at a single equilibrium point). As you will read in many of the chapters in this book, social-ecological resilience highlights the advantages of institutional flexibility. Resilience scholars suggest that even if centralized and hierarchical institutions could promote restoration of system function and structure in the face of perturbation, their rigidity might inhibit transition to a more desirable state when existing conditions are untenable (Berkes and Folke 1998; Gunderson and Holling 2002).

Chapter Overviews

Understanding Collaboration

This book explores the meeting point of planning and natural resource management in their attempt to understand how to intervene to enhance community resilience. They must intervene while at the same time preserving the autonomy and agency that both energize collaboration. The integrative and theoretical chapters of the first section of the book, "Understanding Collaboration," discuss various ways that collaborative processes contribute to resilience in the face of technological breakdown, disease, homelessness, and climate change. Describing in joint fact-finding as well as holistic sensemaking and storytelling, authors suggest that these techniques develop trust and empathy, foster understanding of interdependent relationships, and enhance cognitive capacity.

In chapter 2, Connie Ozawa considers how trust shapes a community's capacity to respond to catastrophe. While some people are more trusting than others, Ozawa notes that trust is also a group cognitive process, created or lost through social interaction. Cognitively based trust is grounded in the expectation that individuals (or organizations) will act in ways that are competent, committed, caring, and predictable. Ozawa suggests that trust is fragile and can rapidly disappear when norms of civic engagement are violated. She examines the Three Mile Island nuclear accident and a proposal to cover an open reservoir in Portland, Oregon, to prevent terrorism. Through these examples, Ozawa shows how quickly trust can be undermined by decision makers who feel that a situation is too urgent to submit to collective deliberation.

Chapter 3, by Moira L. Zellner, Charles J. Hoch, and Eric W. Welch, describes how the complexity of social-ecological system dynamics can inhibit or degrade trust. These dynamics can make it hard for individuals to understand how their actions matter or why they should change. The system can make it easy for defectors to operate undetected. The authors suggest that building trust can convert mutual vulnerability into recognition of interdependence. Collaboration helps by facilitating this recognition, building faith that others will act in concert, and thus enhancing capacity to respond to a crisis. The authors examine two case studies: a homelessness initiative in Chicago, and an attempt to change farming practices in a vulnerable water-supply watershed in upstate New York. They show how collaboration, in both cases, linked stakeholder diversity and vulnerability in ways that promoted equity and increased capacity to generate innovative responses. The solutions worked well for stakeholders at various organizational scales in the system. In both cases, collaborative dialogue built enduring relationships. The dialogue allowed and fostered recognition of interdependence that fostered social solidarity.

In chapter 4, Sanda Kaufman proposes that there are limits to an individual's capacity to process the information required to understand social-ecological systems and to respond appropriately to crisis. She suggests that collaborative planning can compensate for these cognitive deficiencies. Her proposal draws on an array of ideas, from psychology, linguistics, social psychology, social-ecological systems theory, complexity theories, and planning. She offers the possibility that collaboration can address inherent limits on individual cognition. Limits can be expanded by introducing a diversity of views, interests, preferences, values and solutions. Further,

such efforts can support and encourage social interaction that enables mutual framing, trust building, social learning, and co-construction of shared stories.

Chapter 5 pinpoints a fundamental factor behind successful collaborative resilience: time. Jana Carp reflects on the Slow Food and Slow Cities movements in the context of collaborative planning. She suggests that increasing resilience requires resisting the pace of our hurried world by intentionally slowing down the pace of interaction and information. This provides the longer time period required for storytelling, deliberating, and empathizing. Like Kaufman, Carp recognizes the time required to move beyond simple mental models. People must engage with the social and ecological complexity of variables and processes that are slow-acting, incremental, or tightly coupled. In addition, Carp suggests that these "slow practices" are necessary to "reclaim our capacities at human scale" through trust-building, group learning, and building a sense of history and place.

In chapter 6, John Randolph provides a broad appraisal of collaborative approaches to climate change. His ideas touch on research, international goal-setting, and planning for mitigation and adaptation. He emphasizes that building climate-resilient communities is part social mobilization and part expert practice. Both approaches are necessary; they develop social capital and self-organizing abilities, they expand social acceptance and political support, and they build capacity to prepare for and cope with climate change. Randolph urges careful diagnosis of social-ecological context and opportunities to enhance the circumstantial advantages of particular collaborative designs.

Collaborative Resilience Case Studies

The eight case studies in the second part consider how collaboration can increase resilience to oppression, natural disasters, natural resource scarcity, and climate change. The first four cases describe collaboratives that tend to be highly inclusive and that are intended to maintain system continuity and integrity by reorganizing in response to changing conditions. All of the collaboratives show adaptive resilience (Walker et al. 2004). In contrast, the collaboratives described in the next four cases tend to exclude certain stakeholders in their pursuit of transformative resilience. When ecological, economic, or social conditions make an existing system untenable, they seek to "create untried beginnings from which to evolve a new way of living" (Walker et al. 2004, 7).

Reaching Consensus

In chapter 7, Luis A. Bojórquez-Tapia and Hallie Eakin describe a highly inclusive collaborative process organized in response to a federal requirement to create environmental assessments. On the hurricane-prone island of Cozumel, Mexico, unrestrained tourist development and urbanization were increasing human vulnerability and degrading terrestrial and marine ecosystems. In this instance, participants tried a new approach. They used a systematic technique—a combination of GIS and multicriteria decision analysis. The strategy enabled a synthesis of diverse forms of knowledge and reduction in power inequities. As they constructed a land suitability map, stakeholders voiced conflicting visions, probed for underlying interests, and develop shared criteria. After the collaborative process ended, continued availability of the map placed a check on efforts to circumvent the stakeholder's collective vision. Circulation of the map extended the influence of this relatively brief collaborative process and fostered greater accountability in decision making.

In contrast, Edward Weber describes, in chapter 8, a long-lived collaborative. The Blackfoot Challenge, organized by entrepreneurial stakeholders in the Blackfoot Valley of western Montana pursued a much broader mandate over fifteen years. In a community that was at first deeply divided, the Challenge created trust, cohesion, and capacity for innovation. Weber ties its effectiveness to several factors: a supportive regulatory structure, ample resources for program design and implementation, and the presence of organizers with a common-sense, strategic approach to problem-solving. The chapter covers the relationship between private and public responsibilities. It answers questions about the expectations of mutual aid, and the ways in which stakeholders can reach agreement about desirable change.

In chapter 9, Patrick McConney and Terrence Phillips describe an effort to enable community-based fisherfolk organizations to participate more effectively in collaborative regional governance of Caribbean fisheries. The authors began their participatory-action research by facilitating a discussion among fisherfolk, fisheries officers, and other stakeholders about the meaning and practical significance of the concepts of adaptive capacity, resilience, and networks. Through a series of site visits, workshops, and collaborative dialog, the authors helped stake-holders apply these ideas to design a voluntary network. This network would help to preserve fisherfolk's individual autonomy as well as enable them to express a collective voice in emerging consensus-based governance arrangements.

Chapter 10 is by Franklin Dukes, Jill Williams, and Steven Kelban. They begin by asserting that a group of people who have suffered "unrightable

wrongs" (such as slavery or segregation) might be less resilient to new crises. Society may have shown an unwillingness to acknowledge and address past wrongs against these people. This unwillingness can reduce the group's trust, social cohesion, and collective will. The authors examine several cases, such as the Greensboro Truth and Reconciliation Commission, the Bainbridge Island Superfund cleanup, and efforts to address slavery's legacy at the University of Virginia. The authors emphasize that outsiders can provide neutral facilitation during times of crisis. Outsiders can help communities to reach consensus about past injuries and to address issues that perpetuate social division and inequality.

Advocating Change

The four chapters in the section "Advocating Change" describe transformative resilience. Such resilience requires collaborative efforts by disempowered actors to engage in critical discussion. In this way, people can mobilize to reinvent institutions, overcoming an entrenched status quo.

In chapter 11, Robert Arthur, Richard Friend, and Melissa Marschke draw on decades of experience in Southeast Asia's Mekong region. Arguing that resource management is unavoidably politicized and unfair, they suggest that reducing conflict to promote greater collaboration may only perpetuate inequities. Alternatively, they urge consultants and expert advisors to support local communities' efforts to organize collaboratives that strive for social change. They suggest that prioritizing local needs and aspirations can lead to institutional and discursive shifts that can bring about transformative change.

In chapter 12, Karen Till describes how in Cape Town, South Africa, the "District Six Museum" enabled descendents of non-white people who were forcibly relocated during Apartheid to imagine what it might mean to inhabit their city again. The museum's collaborative spaces and processes facilitated acknowledgment of long-silenced wrongs and communicated an experience of the city as a reservoir of living memory and emotional attachment. This museum enabled community dialog about possible shared futures, many of which were not yet visible in dominant representations of the urban landscape. Till critiques systems science for supporting a singular and hegemonic temporal and spatial conception of resilience. She suggests that urban resilience relies on the capacity to create stories that challenge dominant understandings about the past and future. Such stories strengthen diverse claims to inheritance and citizenship.

In chapter 13, Ryan Bullock, Derek Armitage, and Bruce Mitchell consider collaborative efforts to address the long-term decline in economic conditions and forest health in Northern Ontario, Canada. Disempowered

actors met informally in what the authors call "shadow networks" that allowed them to speak openly without alarming the provincial government, forest companies, and labor groups who dominated the region. Through collaborative dialog, participants were able to reflect on community needs and ecological limits. They organized to advocate controversial proposals for land tenure reform and changes in forest management.

Chapter 14 examines how a group of collaboratives called the U.S. Fire Learning Network (FLN) addressed institutional obstacles to restoring natural fire regimes in the nation's forests. William Hale Butler and I describe how the FLN developed a common "social imaginary" across a dispersed network of collaboratives. Disrupting old assumptions and habits in favor of a shared practice of ecological restoration, network participants were able to work autonomously while engaging in a coordinated challenge to long-standing professional and organizational commitments to fire suppression.

In chapter 15, I identify ways that the fields of natural resource management and planning can benefit from understanding how both professions have approached collaborative resilience. Social-ecological scholarship can benefit from an understanding of how collaboration can reshape collective knowledge, identity, and governance possibilities. Planning scholarship likewise can benefit from an appreciation of how resilience informs an expanded range of collaborative processes that can enable communities to do more than just rapidly recover from an immediate crisis. I also suggest that the productive tension between the two fields informs us on several questions: How can communities reach agreement on what social and ecological relationships they should attempt to make more resilient? What approach should they use? Who will benefit? This approach (which I call "communicative resilience") can enable communities to better understand their place within complex adaptive systems. As communities engage with power and politics, they can make a just resilience possible.

Conclusion

At the convocation in Cassell Coliseum on April 17, 2007, the day following the shootings, professor and poet Nikki Giovanni delivered a poem called "We Are Virginia Tech."[1] Giovanni urged the university to take time to reflect and learn, rather than strive to "move on" quickly from the tragedy: "We are better than we think we are and not quite what we want to be. We are alive to the imaginations and the possibilities. We will continue to invent the future through our blood and tears and through all

our sadness." Giovanni asked us to broaden our compassion to include those suffering from other crises, such as AIDS, warfare, and water scarcity, as well as the suffering that humans inflict on other species.

In this spirit, *Collaboration for Resilience* examines the potential to apply the collaborative energy that Virginia Tech demonstrated after the shootings to a broad range of challenges, including systematic oppression, natural disaster, resource scarcity, and climate change. This book shows how collaboration can create and build community by fostering trust and the capacity for mutual reinvention. Collaboration can create new kinds of knowledge, identity, and institutions. You can read in these chapters about communities that have resolved disputes and recovered from crises. This book considers how crises may offer a challenge to injustice and how crisis may promote greater resilience. The concept of resilience is a complex and irreducibly uncertain and contingent goal, consigning hope for speedy return to an optimized equilibrium to an earlier, more innocent time.

You will not learn from this book any specific guidelines for practice. We do not mean to offer modeled futures and or firm policy recommendations. Instead, this book offers to you some stories of what may happen. You will come away with situated knowledge, contingencies, details, analogies, and interpretations. We encourage you to adopt a precautionary humility in seeking to promote resilience. We hope no one will approach this challenge with an illusory sense of mastery and control. Rather, we encourage you to enable participants in collaborative processes to come to their own understanding of resilience by drawing on their own knowledge and telling their own stories. This method can aid consensus. This strategy can also enable a committed group to challenge dysfunctional but durable institutions. Such a capacity is especially useful during times of rapid transformation, when existing governance models often fail.

Note

1. Transcript and video online at http://www.americanrhetoric.com/speeches/nikkigiovannivatechmemorial.htm.

References

Berkes, F., and C. Folke. 1998. *Linking social and ecological systems*. Cambridge, U.K.: Cambridge University Press.

Booher, D. E., and J. E. Innes. 2002. Network power in collaborative planning. *Journal of Planning Education and Research* 21:221–236.

Botkin, D. B. 1990. *Discordant harmonies: A new ecology for the twenty-first century*. New York: Oxford University Press.

Caro, R. A. 1974. *The power broker: Robert Moses and the fall of New York*. 1st ed. New York: Knopf.

Carroll, M. S. H., L. Lorie, P. J. Cohn, and J. Burchfield. 2006. Community wildfire events as a source of social conflict. *Rural Sociology* 71:261–280.

Fukuyama, F. 2007. *Blindside: How to anticipate forcing events and wild cards in global politics*. Washington, D.C.: Brookings Institution Press.

Fullilove, M. 2004. *Root shock: Upheaval, resettlement and recovery in urban America*. New York: Random House.

Gunderson, L., and C. S. Holling. 2002. *Panarchy: Understanding transformations in human and natural systems*. Washington, D.C.: Island Press.

Gunderson, L., C. S. Holling, and S. Light, eds. 1995. *Barriers and bridges to the renewal of ecosystems and institutions*. New York: Columbia University Press.

Hardin, G. J., and J. Baden. 1977. *Managing the commons*. San Francisco: W. H. Freeman.

Healey, P. 1997. *Collaborative planning: Shaping places in fragmented societies*. London: Macmillan Press.

Hoffman, S. M. 1999. The worst of times, the best of times: Toward a model of cultural response to disaster. In *Catastrophe and culture: The anthropology of disaster*, ed. S. M. Hoffman and A. Oliver-Smith, 134–155. Santa Fe, NM: School of American Research Press.

Holling, C. S. 1978. *Adaptive environmental assessment and management*. New York: John Wiley and Sons.

Innes, J. E., and D. E. Booher. 2010. *Planning with complexity: An introduction to collaborative rationality for public policy*. New York: Routledge.

Jacobs, J. 1961. *The death and life of great American cities*. New York: Random House.

Levin, S. 1999. *Fragile dominion: Complexity and the commons*. Reading, MA: Perseus Books.

Margerum, R. D., and D. Whitall. 2004. The challenges and implications of collaborative management on a river basin scale. *Journal of Environmental Planning and Management* 47 (3): 407–427.

Mintz, A. 2001. *Popular culture and the shaping of Holocaust memory in America*. Seattle; London: University of Washington Press.

Nowak, J., and R. E. Veilleux. 2008. Personal reflections on the Virginia Tech tragedy from a victim's spouse with commentary by a close colleague. *Traumatology* 14:89–99.

Ostrom, E. 1990. *Governing the commons: The evolution of institutions for collective action*. Cambridge, U.K.: Cambridge University Press.

Ryan, J., and J. Hawdon. 2008. From individual to community: The "framing" of 4–16 and the display of social solidarity. *Traumatology* 14:43–51.

Susskind, L. C. J. 1987. *Breaking the impasse: Consensual approaches to resolving public disputes*. New York: Basic Books.

Walker, B., C. S. Holling, S. R. Carpenter, and A. Kinzig. 2004. Resilience, adaptability and transformability in social ecological systems. *Ecology and Society* 9(2): 5.

Worster, D. 1994. *Nature's economy: A history of ecological ideas*. Cambridge, U.K.: Cambridge University Press.