Synthesis, part of a Special Feature on Managing Surprises in Complex Systems

Resilience to Surprises through Communicative Planning

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ABSTRACT. Resilience thinkers share an interest in collaborative deliberation with communicative planners, who aim to accommodate different forms of knowledge and styles of reasoning to promote social learning and yield creative and equitable agreements. Members of both fields attended a symposium at Virginia Tech in late 2008, where communicative planners considered how social–ecological resilience informed new possibilities for planning practice beyond disaster mitigation and response. In turn, communicative planners offered resilience scholars ideas about how collaboration could accomplish more than enhance rational decision making of the commons. Through these exchanges, the symposium fostered ideas about collaborative governance and the critical role of expertise in fostering communicative resilience.

Key Words: *collaboration; communicative planning; resilience; surprises*

INTRODUCTION

An international symposium, Planning for the Unthinkable: Building Resilience through Collaboration, was held at Virginia Polytechnic Institute and State University (Virginia Tech) in November 2008 to discuss how collaboration could cultivate resilience to catastrophic events. Twenty-five researchers from two interdisciplinary fields were invited to share ideas and consider how cross-pollination of their fields could improve society's responses to a wide range of surprises, from Hurricane Katrina (Throgmorton 2008) to fisheries collapse (Marschke 2008, McConney 2008) to climate change (Doubleday 2008, Randolph 2008, Weber and Hayward 2008). One group of participants comprised communicative planning researchers from the field of urban and regional planning. Their work focused not on the content of written plans, but rather on the dialogic process of creating a plan through collaborative learning aimed at mutual understanding, and creative consensus (Healey 1992). The other group of researchers was grounded in social–ecological resilience theory, and their work was principally associated with adaptive resource management. Presentations converged on a common interest in collaborative efforts to adapt to surprise and enhance the potential that surprise offers to catalyze transformative change.

I consider here how these two fields converge on these common themes. Communicative planning researchers' interest in resilience is an expression of the broadening of the field's concerns beyond dispute resolution, as well as a dawning appreciation for social–ecological relationships, as opposed to approaching ecology as just the source of another set of stakeholder claims that require balancing. I also consider resilience researchers' growing interest in collaboration, linking this to their recognition that voluntary coordination could be more effective than hierarchical leadership in building trust, managing conflict, linking actors and initiating partnerships, promoting rapid communication, fostering innovation, and mobilizing support for change.

In addition, drawing from breakout discussions at the symposium as well as the broader literature, I describe how these two interdisciplinary fields differ in the way they define resilience and conceptualize human agency. Despite these distinctions, I suggest what these two fields can learn from each other to define a common practice. Collaborative planners have limited their ability to address surprises by adopting a conventional planning definition of resilience as the restoration and maintenance of an optimal stable condition. There are broader possibilities offered by the concept of social–ecological resilience that

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encompass a capacity to withstand loss, recover identity, and retain structural and functional complexity. Conversely, resilience thinking can benefit from collaborative planning's understanding of the dialectic between social–ecological dynamics and collective knowledge and identity. Communicative planning is a particularly useful framework for advancing transformative social–ecological change by diversifying responses to change and uncertainty, sustaining new forms of collective knowledge and identity, and reshaping governance possibilities.

I conclude by summarizing the criteria that both fields share for collaboration, as well as the criteria of each field alone. Noting the need for a reflexive perspective on the limits to expert guidance of a collaborative process, I will propose the concept of "communicative resilience" as a conceptual foundation for shared work across the two fields, combining both rigorous scientific analysis and communicative action to bridge political, cultural, and epistemic difference and coproduce new ways of living and forms of life.

CONVERGING FIELDS

Communicative Planning and Resilience

Communicative planners have become interested in resilience over the past few years because of a quick succession of dramatic catastrophes and emerging threats. Resilience also has a natural appeal to planners, given their longstanding focus on coping with surprise, whether from natural disaster, technological failure, or exhaustion of fisheries, forests, oil, or other resources. Equally importantly, recent developments in the field have spurred communicative planners' interest in resilience.

Communicative planning considers how collective deliberation can accommodate different forms of knowledge and styles of reasoning to promote social learning and yield creative agreements. The field emerged amidst the gridlock, complexity, and uncertainty of environmental management in the 1980s, when regulatory agencies, legislatures, and the courts were increasingly incapable of reaching decisions and enforcing them in a manner that was timely, cost efficient, and equitable (Weber 1998). In response, planners organized facilitated discussions that allowed stakeholders to resolve differences by consensus, combining broad

democratic legitimacy with small-group deliberation. Sustained and guided dialog enhanced capacity to solve conflict by building trust, clarifying motivating interests, and engaging in joint fact finding (Wondolleck and Yaffee 2000).

As collaboration became widespread, new possibilities came into focus beyond resolving conflict and solving problems. Drawing on fine-grained analyses of collaborative processes, communicative planners suggested that deliberation could alter adversarial relationships in ways that outlived the resolution of specific disputes, as stakeholders remained engaged with one another and gained trust and interdependence (Healey 1997, Booher and Innes 2002). These relational changes were goals in their own right, as well as means to other ends, such as shaping a new institutional order to address root causes of conflict. In addition to localized and immediate disputes, collaborative approaches were applied to issues playing out over longer time scales and across multiple spatial scales (Margerum and Whitall 2004, Innes et al. 2007). Planners described this broadened scope as a reorientation from collaborative dispute resolution to collaborative governance, or an "ad-hocracy" (Menkel-Meadow 2005) that could be constantly made and remade through ongoing practice. Finally, collaborative practice itself has diversified from an initial focus on conflict resolution through facilitated multi-stakeholder collaboration to a wider range of planning processes, some of which promote objectives that differ from solving specific problems, such as social learning and organizational change (Goldstein and Butler *in press, a*, Innes and Rongerude 2006).

The contribution of communicative planners to the symposium reflected this interest in taking collaboration beyond dispute resolution, in pursuing collaboration at multiple scales, and in diversifying practice. The issues they addressed included breakdown in urban infrastructures, adaptation to climate change, and institutional obstacles to ecosystem restoration. These issues cannot be solved by simply reaching a consensus on a permanent and lasting settlement, the kind of outcome associated with the most common definition of sustainability. Instead, these problems require ongoing engagement, social learning, and coordination across scales, under conditions that are contingent and variable. To address this range of goals, participants described a broad range of collaborative approaches, from multistakeholder

consensus processes to learning networks, civic roundtables, and community reconciliation processes.

Social–Ecological Resilience and Collaboration

Resilience thinking has followed a similar developmental path as communicative planning, both in terms of expanding the scope of collaboration and in identifying additional benefits associated with collective voluntary action. The early emphasis of the field was not on collaboration, but rather on quasi-experimental and iterative decision making through adaptive resource management (Holling 1978, Gunderson et al. 1995). This approach was offered to redress resource managers' inability to optimize output to preexisting specifications, like a fishery maintained at maximum sustained yield. Over time, resiliency thinking expanded its scope beyond the management of resource stocks, discarding the assumption that resource management was solely a state function and agency responsibility. Resilience thinkers began emphasizing the role of civil society, suggesting that polycentric, self-organizing, highly participatory governance could increase interaction across organizational scales and cope with change and uncertainty by expanding the diversity of response options through social learning (Gunderson and Holling 2002, Folke et al. 2005).

Resilience thinkers also developed a leadership model that resembles the role of facilitator within communicative planning, someone who enhances capacity for voluntary coordination by "...building trust, making sense, managing conflict, linking actors, initiating partnerships among actor groups, compiling and generating knowledge, and mobilizing broad support for change" (Folke et al. 2005). In keeping with this inclusive emphasis, resiliency was associated with the eclectic uptake of knowledge from both scientific and traditional sources. Learning across knowledge systems was defined in terms of competencies as well as knowledge, with the goal of developing each individual's capacity to adapt to new situations.

Resilience thinkers have been considering how collaborative interaction could contribute to resilience in arenas beyond natural resource management, increasing diversity of response options and dealing more appropriately with change, uncertainty, and surprise, from local to global scales (Gunderson et al. 1995, Walker et al. 2004, Folke et al. 2005, Berkes and Turner 2006, Turner and Berkes 2006). Although natural disasters are often a proximal cause for social–ecological collapse (McIntosh et al. 2000, Diamond 2004), resilience analysts emphasize how disasters may provide opportunities to gain new knowledge and develop the "...capacity to expect the unexpected and absorb it" (Folke et al. 2005). This work redirects attention from the governmental actions and policies that constitute disaster response, suggesting that these are oriented toward quick restoration of the status quo rather than increasing social–ecological resilience (Adger et al. 2005, Folke et al. 2005).

Thinking beyond the fleeting opportunities for change during and immediately after disaster to normal and more complacent times, resilience thinkers have proposed collaborative approaches to foster and preserve innovation. Existing outside of organizational hierarchies and formal accountability structures and regulatory regimes, and free from scrutiny, pressure, and obligation, informal civil-society networks can make hidden potential surprises visible or unthinkable surprises thinkable, developing a diversity of responses to rapid change and uncertainty (Gunderson et al. 1995, Folke et al. 2005). These so-called "skunkworks" (Gunderson 1999, Holling 2001) are free to think flexibly and creatively across organizational barriers, incubating possibilities that may be useful in the event that disaster provides an opening for behavioral or policy change (Kingdon 1984). Collaboration can also compress the long time required to elaborate adaptive knowledge, practices, and institutions (Turner and Berkes 2006), as well as develop ways to incorporate new ideas into widespread cultural patterns to normalize disastrous situations, or preserve memory and expertise between infrequent opportunities for change.

INTEGRATING DISCIPLINARY PERSPECTIVES

Although these two interdisciplinary fields are converging on common topical ground, their capacity to complement one another is challenged by differences in the way that they define resilience and conceive of human agency, knowledge, and institutions. I will draw out these distinctions, and suggest that these are not incommensurable differences, although they do require addressing fundamentally different assumptions about the

domain of practice, theory, and methodology that made it difficult to even communicate across the two fields at the symposium. The first step to cross-fertilize the fields without collapsing their distinctions is to be explicit about their differences, as I will attempt here. I also suggest how to begin establishing a common practice to enhance social–ecological resilience through communicative action.

What Collaborative Planning Can Learn from Social–Ecological Resilience

Communicative planners at the symposium equated resilience to surprise with the ability to anticipate disaster, mitigate it when it occurs, and rapidly restore prior conditions. This definition, grounded in the focus on natural and technological hazards in planning, is the predominant application of resilience in planning (e.g., Vale and Campanella 2005). The five assumptions about the character and origin of surprise and what comprises resilience that are embedded within this definition are contrasted with the assumptions of social–ecological resilience researchers in Table 1.

Accordingly, social–ecological resilience researchers described a broader range of possible outcomes than the restoration and maintenance of conditions existing before a disaster. For instance, Doubleday (2008) analyzed how climate impacts and other potential impacts of development of the oil tar sands in Alberta, Canada, were difficult to address because of unpredictable system dynamics resulting from cross-scale links among ecologies and individuals, organizations, agencies, and institutions. Presenters also considered how collaboration could promote different kinds of system dynamics. Symposium participants also discussed how these more complex dynamics call into question whether the system is amenable to human understanding, prediction, and control to achieve desired ends. Recognizing limits in our ability to deliberately change system conditions to achieve an alternative state of resilience, participants noted that surprises might be an opportunity to "surf the change," taking action, but accepting that control was partial and the outcome uncertain.

Presenters also described how different forms of collaborative action could promote resilience that was either adaptive or transformative (Walker and Salt 2006). Collaboration could maintain overall continuity and integrity by increasing capacity to adapt to changing conditions. Presenters discussed how design features such as system redundancy and modularity could enhance adaption, such as McConney's (2008) description of network connectivity among Caribbean marine-conservation areas. Others considered how collaboration could enhance resilience by fostering system reconfiguration. For example, Moore and Westley (2008) examined how "network entrepreneurs" mobilize support and overcome resistance to social change by connecting across boundaries, recognizing and generating patterns, revitalizing energy, and keeping alive a strategic focus. As noted earlier, this emphasis on collaborative learning, innovation, and flexibility and openness in collaborative structure, process, domains, and goals, is consistent with the focus on cross-scale challenges and collaborative governance within communicative planning (Margerum 2008, Goldstein and Butler *in press, b*).

Rather than redressing present-day crises, this approach to collaboration can incubate new ways of life to help communities respond rapidly when conditions overwhelm ways of reasoning, living, and governing that had previously proven resilient. Bullock et al. (2008) also explored this possibility at the symposium, suggesting that a collaborative network could enable forest-dependent communities in northern Ontario, Canada, to "learn their way out" of the region's seemingly inevitable economic and ecological decline by developing ideas for land-tenure reform that were currently taboo among provincial government, labor groups, and forest companies that dominate the region's political economy. Presenters discussed how surprises like an acute economic crisis may enable the network to advocate these new ideas, possibly "tipping" the system over a threshold into a new configuration (Hahn et al. 2006). Social–ecological resilience provides collaborative planners with a conceptual framework to embrace surprise when it offers opportunities for structural change to avoid greater catastrophes or to change conditions that are neither desirable nor tenable.

In contrast, the way that planners have addressed resilience to threatening and disorderly surprises is narrower than these adaptive and transformative possibilities. This planning approach might even reduce social–ecological resilience by creating a "rigidity trap" (Gunderson and Holling 2002), a management or governance system that maintains system conditions through shocks or perturbations

Table 1. Comparison of assumptions about resilience and surprise.

	Communicative Planning Perspective	Social–Ecological Resilience Perspective
What is "resilience?"	An ability to maintain equilibrium or "bounce back," in the way that physicists and engineers refer to a material's ability to absorb energy when it is deformed elastically and then to recover that energy upon unloading (Hollnagel et al. 2006).	How far a particular relationship between social processes and ecological dynamics can be perturbed without dramatic loss of identity and structural and functional complexity (Holling 1973).
What is "resilient?"	A social condition, defined at the level of community, organization, city, region, or globe. Ecological and technological factors are monitored and managed to sustain social integrity, but are not part of what is resilient.	A multi-scalar social and ecological condition, because a social system cannot be dissociated from the biosphere.
What are "surprises?"	A narrow range of unexpected destructive shocks, rapid and discrete events such as technological failure, hurricanes, and violent attack.	Range from sudden, rapid, discrete, and irreversible disasters to more gradual and insidious events, such as climate change. Also encompass incremental, discontinuous, and spatially heterogeneous events like declining agricultural productivity, as well as events that escape notice because they are novel or occur imperceptibly over generations.
Where do surprises come from?	Originate outside of the community, as threats to the community's security and durability.	Can be both external to a community and endogenous to it, such as regime-change thresholds and other system dynamics.
What is the relationship between surprises and resilience?	Surprises are harmful and undesirable events that threaten resilience, and conversely systems that are vulnerable to surprises are always less resilient.	Surprises are sometimes harmful and sometimes beneficial, because they can contribute to resilience or detract from it, endangering system continuity and integrity or marking thresholds for system transformation when existing conditions are untenable. Conversely, vulnerability to surprise could threaten or enhance resilience.

that might otherwise catalyze adaptive change (Allison and Hobbs 2004). Rigidity traps often occur when natural resource bureaucracies perpetuate themselves at the expense of the productivity and vitality of the ecosystems that they manage. For example, despite ecological decline, increased incidence of catastrophic fires, and a paradigm shift in fire science to ecological fire restoration, U.S. fire-management agencies continue to devote most of their resources to fire suppression. Catastrophic fires have not catalyzed policy change in part because of the positive feedback of financial and political support that accompanies fire emergencies. Forests in the U.S. and their management regimes are maintained in a highly connected, rigid, and inflexible state, and are susceptible to catastrophic surprise (Holling et al. 2002). This approach to fire management is consistent with the dominant definition of resilience within planning that supports providing rapid response to a narrow range of external surprises to restore an unchanging status quo. This is both incompatible with social–ecological resilience and unsupportive of communicative-planning practice. Ozawa's (2008) symposium presentation captured this contradiction within planning, suggesting that the decision of city officials to immediately cover reservoirs in Portland, Oregon to reduce the risk of poisoning by terrorists after the September 11, 2001 attacks, undermined the civic culture of engagement and deliberation that was integral the city's resilience in a broader sense.

What Social–Ecological Resilience Can Learn From Collaborative Planning

Social–ecological thinkers at the symposium described how individuals who collaborate, transfer information, create common knowledge, and develop norms of reciprocity, come to understand the interests of others and build trust. Operating across a continent (Doubleday 2008) or in a village (Marschke 2008), collaborative processes were lauded for overcoming obstacles to collective action and developing new institutional rules and behavioral routines for collective resource management. These papers were largely grounded in common property analysis (e.g., Ostrom 1990), which examines how individuals can make rational choices in favor of the social–ecological common good. This deductive research approach searches for generalizable rules or design principles for collective resource management, proposing and testing falsifiable propositions about human behavior. The methodological positivism of rational-choice analysis creates common ground within social–ecological resilience research, whose origins lie in the natural sciences, particularly ecosystem analysis (Holling 1978).

Communicative planning does not share this theoretical or methodological heritage, as it is "not an experimental science in search of law, but an interpretive one in search of meaning" (Geertz 1973). Symposium presentations considered how collaboration could mediate between epistemic difference (Innes and Booher 2008), enhance collective meaning (Zellner et al. 2008), and construct individual and collective identity (Throgmorton 2008). A common feature that unites the conceptual pluralism of communicative planning is a social–constructivist epistemology (Berger and Luckman 1967) and a phenomenological interpretation of the relationship of knowledge to action (Healey 1997). Different ways of knowing are partial perspectives on the external world, whose reliability is grounded in the experience of individuals as they work to sustain meaningful truths. Nature has agency that must be respected by the knowledge produced to represent it, and not all understandings are equally good or precise. Knowledge is sustained through ongoing, institutionally embedded practices that may include experiment, observation, ritual, theorizing, and storytelling. Neither a simple reflection of truth about nature nor a product of social interests, knowledge is "situated" (Haraway 1996), both individually in relation to a perspective, position, and embodiment, and collectively in terms of governance and cultural expression. Alternative forms of knowledge carry assumptions about individual behavior that are grounded in different kinds of lived experience and institutional relationships.

For communicative planners, institutions, like knowledge, are transformed as structure and agency interact through dialogic interactions and relationships (Healey 1997). Although social–ecological analysts also trace how institutions are shaped in collaborative forums, for communicative planners institutions are not just a framework in which individuals pursue their self-interest. Instead, institutions guide individuals in identifying their interests and shape the social and ecological experiences that provide them with meaning and form their identity. Collaborative processes are a potent space for institutional change to occur because they facilitate critical reflection on otherwise reified institutional commitments. This is a form of learning that extends beyond understanding how to achieve initially intended consequences, what Argyris and Schon (1974) call "single-loop learning." It progresses to "double-loop learning," in which participants re-examine their assumptions and ways of thinking, rethink strategy, and revise the institutional assumptions in which organizational governing values are nested. Collaboration creates a safe space for conducting inquiry that can otherwise be personally and professionally threatening, difficult to comprehend, and disruptive to deeply rooted social practices and relationships. As they build community, collaborators accumulate the capacity to influence other networks and organizations. Individual identity too is mutable. Rather than examining how unitary and stable subjects collaborate to arrive at rational choices, communicative planners focus on how collaboration reshapes identity. For example, Throgmorton's (2008) symposium presentation comparing different ways of telling the story of the chaotic aftermath of Hurricane Katrina shows how persuasive storytelling can help individuals find a new collective place and purpose.

These social processes act in concert to foster transformation, co-producing identity, ways of knowing, and the institutional order. The dialectical tensions of this three-way coproduction process preserve the social dimension of individual cognitive commitment, as well as the epistemic and

material correlates of identity and institutions. These reciprocal relationships can maintain social order as well as open up possibilities for transformative change. Indeed, a coproduced unity tends to change slowly and with difficulty because each part is stabilized by the other. People often resist accepting new ideas that are supported by compelling scientific evidence because the old ideas reinforce their identity and institutional order (Wynne 1996, Goldstein and Hull 2008). Surprises such as hurricanes, tsunamis, insurrections, earthquakes, and wildfires may provide reformers with rare opportunities to advance new social–ecological relationships (Hull 2006). For example, Agrawal (2005) describes how villagers in rural northern India responded to centrally planned scientific forest management with arson and illegal woodcutting. However, after they were offered the opportunity to participate in forest co-management, villagers developed new capacities and began to identify themselves as resourceful and knowledgeable forest stewards, in turn reinforcing the new community-based institutional regime. Efforts like this to take advantage of this space for social innovation must struggle against efforts to restore public confidence in shaken values and institutions that often generate resistance to fundamental change (Goldstein 2008). Collaborative processes can provide the catalyst for transformation during these moments of opportunity and danger, before collective will to consider transformative change inevitably fades (Marshall et al. 2005).

For example, my symposium co-presentation (Goldstein and Butler 2008*a*) and related work (Goldstein and Butler 2009, *in press, b*) describes the U.S. Fire Learning Network (FLN) as a communicative planning effort with potential to increase resilience by springing U.S. fire management's rigidity trap. Taking advantage of the availability of federal funding and willingness to try new approaches after a series of catastrophic fires in the early 2000s, the FLN organized fire managers around the nation into multijurisdictional, landscape-scale learning cooperatives. As of late 2009, the FLN has engaged over 600 participating organizations in 14 regional networks operating in over 100 landscapes. To link independent collaboratives at a national scale, the FLN had to devise a way to operate coherently without central coordination, enabling individuals to autonomously speak with a unified voice. To tie the network together, coordinators created newsletters and listserves that highlighted exemplary practice and

provided landscapes with common analytical tools. This reinforced the FLN's common purpose, providing participants with a sense that they share in the life of a community with common struggles and pleasures, despite not knowing all the members of the far-flung network.

This shared orientation was complemented by a common planning framework that required each collaborative to describe their landscape's healthy pre-Columbian past, degraded present, and a future of either continued decline or ecological recovery. In each landscape, fire managers chose to resolve the implicit moral tension in this story arc of conflict, crisis, and resolution by restoring the paradise lost, redeeming a century of misguided fire management by embracing new priorities to avert ecological decline. To compose their planning narrative, fire managers had to be creative, adaptive, and responsive to local conditions. They engaged in shared work that reinforced a common identity, developed a shared repertoire of knowledge practices, and laid the groundwork for new institutional relationships through active, cross-jurisdictional collaboration. The collaborative's power was not in the plans it produced, but in its ability to disrupt old assumptions and habits and engender collaborative routines and relationships. The FLN built solidarity around an ecologically grounded professional identity, new skills and knowledge to support that identity, and a collective capacity to embark on new, potentially risky management approaches. It disrupted the rigidity trap by having fire managers chart a path from crisis to renewal for ecological and human communities and for fire management itself.

COMMUNICATIVE RESILIENCE

Symposium participants considered the implications for practice of this encounter between communicative planning and social–ecological resilience thinking. As Table 2 shows, although their fields shared common guiding prescriptions for collaboration, each field also had some criteria that were unique. However, synthesis between the two fields of practice requires more than an overlay of these respective practice criteria. Symposium participants noted that achieving a communicative resilience requires careful reflexive awareness of their own influence on the process as planning advisors and

Table 2. Shared and unique collaborative prescriptions.

Field Origin	Collaborative Prescriptions
Collaborative prescriptions from communicative planning	• Beyond facilitating mutual understanding, forge new understandings of self • Beyond promoting knowledge transfer, foster the development of new knowledge practices • Beyond catalyzing "double-loop" learning of political relations, and institutional arrangements, provide the capacity to reconfigure these relationships and foster collaborative governance
Collaborative prescriptions common to both fields	• Abide by norms of transparency and inclusiveness • Enhance trust, commitment, and mutual understanding • Encourage creativity and experimentation, drawing on available resources and ideas • Facilitate expression of multiple perspectives on preferred future states and fruitful discussion across differences • Enable joint fact-finding procedures that would permit consideration of alternative ways of knowing about the system of concern • Enhance capacity, willingness, and initiative to act
Collaborative prescriptions from social–ecological resilience	• Assist participants at different levels of expertise to make sense of complex entities and interactions • Enable specification of the attributes of the system of concern and identification of system dynamics • Facilitate discussion about norms and preferences in the selection of which future resilient state is preferred • Bridge social and ecological connections across spatial, temporal, and organizational scales • Provide guidance to remain integrated with other efforts to enhance resilience while avoiding rigid procedures that constrain interaction

scientists. Taking seriously the phenomenological commitment that all knowledge practice is situated and invested in particular practices (Haraway 1996) requires attention to how expertise is subtly invested in the social order. Although taking social–ecological resilience seriously requires that ecology be given a voice in collaborative resilience, adopting assumptions of a placeless and universal scientific realism might even be an obstacle to enhancing resilience. Expertise is often associated with powerful state or corporate institutions who sponsor its production and distribution. For example, Haajer and Wagenaar (2003) described how government agencies and environmental NGOs used an ecological vocabulary and storyline of "nature development" to expand central authority in rural Holland. Nature was defined with terms like "ecological corridors" and "target types," ideas that provided central authorities with the means and justification to manage land and a way to evaluate their effectiveness. Because communicative planning sensitizes us to the relationships among knowledge practices, identity, and the social order, this awareness must extend to the possible effects of our own practice on a collaborative forum.

The need for this awareness was underscored by the involvement of many symposium participants in collaborative resilience initiatives, often in association with their research. If the purpose of these collaborative forums is to enhance resilience through communicative action, the way that resilience is understood within a collaborative forum might be different from how planners and scientists interpret it. Symposium participants began to develop the distinction between social–ecological resilience as a transdisciplinary construct, and the idea of communicative resilience, responsive to local circumstances and local knowledge and emergent from interaction, and so unknowable before collaborative interaction takes place. Experts can contribute ideas and guidance, but communicative resilience is not a product of expertise. It is generated dialogically through joint fact-finding and collective sense-making, as capable and knowledgeable individuals collaborate. Communicative resilience is governed by an uncertainty principle, because to attempt to know and inform the system is to influence it and thereby change it into something else. This does not preclude assessing communicative resilience initiatives according to rigorous criteria, the frequent focus of work in this journal. Indeed, as one symposium paper emphasized (Pendall 2008), resilience scholars should insist on defining terms that are consistent and useful within their specific intellectual communities, rather than seek a least common denominator between fields. These ideas will be developed further in an edited volume of symposium papers, and through joint initiatives between members of the two fields.

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