Narrating Resilience: Transforming Urban Systems Through Collaborative Storytelling

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Abstract

How can communities enhance social-ecological resilience within complex urban systems? Drawing on a new urbanist proposal in Orange County, California, it is suggested that planning that ignores diverse ways of knowing undermines the experience and shared meaning of those living in a city. The paper then describes how narratives lay at the core of efforts to reintegrate the Los Angeles River into the life of the city and the US Fire Learning Network's efforts to address the nation's wildfire crisis. In both cases, participants develop partially shared stories about alternative futures that foster critical learning and facilitate co-ordination without imposing one set of interests on everyone. It is suggested that narratives are a way to express the subjective and symbolic meaning of resilience, enhancing our ability to engage multiple voices and enable self-organising processes to decide what should be made resilient and for whose benefit.

Keywords: collaboration, governance, narratives, networks, new urbanism, resilience, sustainability

Introduction

Social ecological resilience, conceived in response to the challenges of natural resource scarcity and degradation, has migrated to the city to help individuals, communities and organisations to cope with challenges such as mitigating and adapting

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to climate change (Pelling and Manuel-Navarrete, 2011), disaster planning, management and recovery (Goldstein, 2008), energy and environmental security (Coaffee, 2008), water management (Pahl-Wastl, 2007), integrated land use and transport planning (Newman *et al.*, 2009), and urban design (Colding, 2007). Resilience can serve as a conceptual framework for exploring and enabling new urban possibilities, moving beyond the goals of recovery or persistence that characterise much of sustainability thinking. Resilience thinking highlights the futility of predictive forecasts based on assumptions of order, certainty and equilibrium, an 'engineering' mode of operation that is still deeply embedded in planning method and practice (Folke *et al.*, 2003). Instead, resilience thinking offers planners language, ideas and methods that account for the non-linearity, uncertainty and intrinsically dynamic character of complex systems. Yet there is an unresolved tension between resilience as an expression of scientific and managerial expertise and the need to engage multiple voices and enable self-organising processes to achieve resilience.

In this paper, we propose a way to resolve this tension by pursuing resilience through inclusive planning approaches that enable people to tell stories of what change means to them and how they need to change. We provide examples of communities that define system parameters and relationships on their own terms and act on this knowledge to realise their preference among many possible resilient futures. In previous scholarship on urban transformation, authors have emphasised the existence of emancipatory practices amid social conflict (Bollens, 1999; Friedmann, 1987; Harrison *et al.*, 2008). We extend this area of inquiry to consider the potential of collaborative practices.

We begin by defining social-ecological resilience as a useful transdisciplinary analytical framework for research, while noting how it is less useful as a guide for communities that seek to enhance resilience. We also describe how cities can be understood as part of dynamic social-ecological systems, rather than as bounded and stable entities. Next, we outline how communities can engage in collaborative construction of shared narratives that bridge different ways of knowing and bind people together within a shared understanding of their social and natural world. We consider three cases, beginning with a cautionary tale of an attempt to promote a new urbanist vision in the Santa Ana neighbourhood, Orange County, USA. This plan was thought to be transformative and hopeful by its proponents, yet was perceived as alien and threatening by many long-time residents. Our two subsequent cases show how inclusive narratives enable people to creatively construct their own resilient possibilities. We describe how a multicultural community was mobilised to reintegrate the Los Angeles River into city life; and we describe how ecologists, conservationists and land managers re-envisioned wildfire management across the US by creating a learning network. We conclude with ideas about how planners can engage communities in inclusive collective storytelling that can promote resilience through urban transformation.

Social-ecological Resilience

As a transdisciplinary field, social-ecological resilience thinking offers an alternative to Cartesian scientific modernism—the idea that the world is like a clockwork that can be ordered, predicted and controlled. Social-ecological systems are complex, discontinuous, non-linear and unpredictable, integrating human and natural phenomena across multiple spatial scales and time-frames. Social-ecological resilience science is a transdisciplinary alliance of fields that

share concepts and concerns that resonate with a contemporary sense of uncertainty and insecurity in an era of globalisation, social unrest and ecological limits. Resilience thinking provides a way of understanding how seemingly stable conditions that we see around us in nature and society can alter, reconfigure and become something new, with profoundly different characteristics (Folke, 2006; Kinzig *et al.*, 2006).

Grounded in this indeterminate worldview, resilience is defined as the capacity to respond to perturbations in ways that maintain some, but not all, aspects of system structure and function (Walker and Salt, 2006). The essence of resilience is an ability to change as circumstances change, to adapt and, crucially, to transform rather than continuing to do the same thing faster and better. Social-ecological systems occupy one of many possible alternative system states rather than maintaining a single equilibrium with their surrounding conditions (Folke, 2006). The idea that there is a normal system state is rejected—if a system transforms after disturbance, this is not a failure in resilience terms, but an inherent possibility within that system, one that may help to avoid system collapse altogether.

The dynamics of change in social-ecological systems are described as an ongoing process of renewal and regeneration, using a concept derived from study of ecological succession called the 'adaptive cycle'. Gunderson and Holling (2002) introduced the term 'panarchy' to capture the idea that adaptive cycles are partially nested within one another and interact unpredictably across space and time. Panarchy, in deliberate contrast with 'hierarchy', suggests that while slow-changing, large-area processes influence nested subsystems, they do not exercise control over them—localised actors and processes can self-organise and aggregate to express emergent, higher-order properties. Panarchy and the adaptive cycle have been used to critique governance arrangements that try to keep conditions stable in order to maximise output efficiency.

Resilience scholars have taken on the question of how communities can plan and manage amidst ongoing dynamic change without the presumption of stability and predictability (Folke *et al.*, 2010). They focus on how networked and polycentric governance can preserve overall system integrity by enhancing capacity to adapt in response to changing conditions, both in terms of generating novel alternatives and mobilising the resources and will required to reorganise and transform. Adaptive capacity is enhanced through collaborative problem-solving, social learning and engaging a diversity of stakeholders and knowledge practices (Armitage *et al.*, 2007; Folke *et al.*, 2005). In turn, adaptive capacity is grounded in qualities that include a strong connection to place, ample social capital, dense social networks and a positive outlook (Goldstein, 2008).

From Cities to Urban Systems

Theorising social-ecological resilience for urban settings requires conceptual displacement of the city as a contained and objectively knowable space. Urban scholars have clearly experienced their 'cultural turn' and have long since unsettled the presumption of incontrovertibly measuring, mapping and otherwise representing the city as a singular object of positivist social scientific study. However, willingness to simultaneously embrace a constructivist 'scalar turn' has occurred more recently. Leading the charge have been urban political geographers who, working to theorise the ways in which spatial relations are shaped through a politics of scale, recognise the active

political construction of and dynamic interplay between various scales of governance, from the local and regional to the nation-state and global (Jones, 1998; Swyngedouw, 2000).

Conceptualising urban social-ecological resilience requires just such a scalar reframing, since it is not simply a question of adequately capturing the myriad human–nature interactions that take place within a discrete jurisdiction. Urban systems extend far beyond the physical boundaries of the central city, which is less reliably central, dense and unitary than ever before. In the US, the growing majority of urban residents live in densely populated, suburban-style developments located throughout sprawling, polycentric metropolitan areas (Knox, 2008), dramatically disrupting early paradigms in human ecology and urban ecology such as concentric rings and linear urban-to-rural gradients (Alberti, 2005). From a social-ecological systems perspective, distinctions between city, suburb, countryside and wilderness run the risk of becoming entrenched aesthetic habits as often as valid empirical assessments—and, as a result, residents of urban regions often fail to acknowledge, steward and engage the nature in their midst (Light, 2003), the natural resource systems that enable their existence (Cronon, 1991) and the vast appropriative footprint of their consumption (Rees and Wackernagel, 1996).

Thus, it is essential that resilience thinkers move beyond traditional cities to wider urban systems as the focus of theorisation, recognising that these systems operate at various scales that can be functionally nested. Urban scholars have begun to explore how cities exhibit the cross-scale patterns and processes associated with complex adaptive systems and have proposed a rainbow of urban systems neologisms to describe them, including dissipative cities, synergetic cities, fractal cities, agent-based cities, cellular automata cities, sandpile

cities and network cities (Portugali, 2010). However, it is also crucial to recognise that urban scales are socially constructed, culturally maintained and politically contested (Bulkeley, 2005; Jones, 1998; Swyngedouw, 2000). Cities are relational accomplishments, which matters profoundly to the theorisation of resilience for urban city-regions.

Resilience Thinking and Worlds of Meaning

The idea that scale is an interactional achievement resulting from intentions and choices has not been well developed within resilience thinking. Instead, resilience analysts have focused on developing analytical tools to help managers understand social-ecological dynamics and guide systems toward desirable trajectories by identifying possible leverage points for intervention associated with disturbance regimes, thresholds and regime shifts (Walker and Salt, 2006). These tools selectively combine the natural sciences with quantitative, positivist social sciences such as economics and institutional analysis to model the complexities of human–environment relations. The choice of social science approach in such tools tends further to reify social dynamics as a natural fact, downgrading the potential agency of human beings to interpret, learn and change. These efforts are oriented toward government planners and managers who need to make decisions about adaptation goals without assuming that fixity and control are possible.

However, resilience analysis does not engage with the material, social and symbolic landscape that constitutes the lived experience of the communities whose resilience is being sought (Adger *et al.*, 2009; Crane, 2010). Inhabitants of multiethnic, multiracial and multicultural places know

their cities by experiential, contemplative and artistic knowledge in addition to science—what urban planning scholar Leonie Sandercock (2003a) calls an 'epistemology of multiplicity'. Resilience analysis cannot capture how resilience is experienced through these richly varied ways of knowing and worlds of meaning (Feldman *et al.*, 2006; Goldstein, 2010; Lejano and Ingram, 2009).

Practical efforts to bridge this divide and assist communities have struggled to make the concept of resilience meaningful and useful. For one thing, the ideas are often as complex as the phenomena they describe, even for people familiar with the managerial sciences. Implementing one resilience assessment, Wilkinson *et al.* (2010) relates how a group of environmental planners repeatedly asked her to translate the basic principles of resilience into terms they could understand, with one commenting that

> The language is opaque. It is actually quite dreadful … I will be looking at ways to try and simplify some of the language and make it more digestible (Wilkinson *et al.*, 2010, p. 37).

More fundamentally, separating assessment from community engagement accepts the presumption that social-ecological systems just exist naturally, ignoring the influence of epistemic and cultural diversity, normalising system dynamics as if they are inevitable, obscuring how systems are socially and ecologically constructed, and depoliticising the value choices that motivate and guide human agency (Porter and Divoudi, 2012). Communities need to engage with the subjective and symbolic meaning of resilience in order to be able to decide the specifics of what should be made resilient to which disturbances, what are the desired outcomes and whose resilience should have priority, since resilience for some people may lead to loss of resilience for others (Jasanoff, 2008).

Without this awareness, elite and managerial preferences for stability and continuity may remain unexamined, despite being as normatively inflected and politically and culturally situated as any other configuration of resilience (STEPS Centre, 2008).

Resilience and Narrative

The quest for resilience, as with planning, invariably entails envisioning healthy, vibrant communities. However, resilience is not simply the capacity for change, but an ability to adapt without losing the culture, community ties and local traditions that make a place home. It is envisioning a kind of change that nurtures communities here and now without tearing them apart. This type of visioning process comes to life through narrative. For our purposes, we can understand narrative as simply "a language act by which a succession of events having human interest are integrated into the unity of this same act" (Bremond, 1973, p. 186).

There is considerable literature in the field of planning that has underscored that planning is, as Throgmorton (2003) describes it, persuasive storytelling. Sandercock (2003b) reminds us that not only is an effective plan a coherent narrative, but also it is through the crafting of the narrative that diverse players find common threads that bind them to a shared vision or that opposing parties begin to work out catharsis and healing. Conversely, she points out that factors that alienate and divide can be traced to flaws in a community's foundational narrative. If we are to understand the problems that beleaguer a place and identify potential resolutions, we have to study emplotment—the way that diverse characters and events are tied into a coherent logical or temporal thread that makes sense to those who are also part of the story (Lejano *et al.*, 2013). Elements of emplotment include: who tells

the story and what is its plot, the central characters in the story, moral themes and lessons, and coherence of its central logic. A community's foundational narrative, even in its simplest form, is then codified and reco-dified in a stream of planning reports, circulars, ordinances and even institutional designs.

Change the story, and you change the city. As Sandercock (2003b, p. 18) points out, stories can be used "in the service of change, as shapers of a new imagination of alternatives". This, too, is a central message of Finnegan (1998), who provides compelling evidence that people act out the stories they tell about the city and, indeed, fashion the city upon these stories. While planning can be seen as an act of storytelling (Forester, 1999), the stories themselves can invoke an imagined future, "not just to talk about what is, but also what ought to be" (Schon and Rein, 1975; quoted in van Hulst, 2012, p. 300).

Resilient cities need a coherent foundational narrative (Sandercock, 2003b) that envelops concerns of those affected and weaves these concerns into a credible story that resolves issues and ties people together. However, in this essay, we explore the possibility that these stories need not be all-encompassing metanarratives (Schon and Rein, 1995). Good narratives capture and represent many different voices and are amenable to being told by each in their unique way (Bruner, 1990). These plurivocal narratives are partially shared, allowing for differences in perspective, storyline and focal point and enabling different sectors of a community to tell in their own voice how they belong to the city (Lejano *et al.*, 2013). Planning can engage multiple resilient alternatives when those who experience the city can co-construct their own stories (van Hulst, 2012). Planning is then less about authoritative guidance and more of a means for communities to take turns creating and retelling partially shared stories and weaving together a collective life out of their authentic lived experience (Lejano and Wessells, 2006).

Three Cases

We now present three cases that illustrate how narration can define and even help to achieve resilience. These cases each emerged from the authors' own engagements with various communities and each case dramatises particular aspects of our understanding of resilience narratives. The first case, in Santa Ana, California, is a cautionary tale of how even the most carefully crafted planning narrative can disenchant when it is given and not shared. The second case, the Los Angeles River (LAR) restoration initiative, illustrates how informal social networks can emplot a plurivocal narrative that binds together widely disparate interests. The third case, the Fire Learning Network (FLN), illustrates how a networked collaborative process enabled creation of narratives that were both situated in the local context and coherent enough to bind the fire community to a larger shared purpose.

Barrio Santa Ana

Santa Ana, California's recent 'Renaissance Plan' is an example of state-of-the-art downtown redevelopment and a pivot point from which we consider departures from normal planning practice. The project took a New Urbanist approach to refashioning an older downtown area seen to be economically stagnant (City of Santa Ana, 2007). The Renaissance plan envisioned a utopian ideal of walkable streets, mixed uses, higher-end establishments and a picturesque New Urbanist architectural template. This is a visionary counterpoint to what Santa Ana has been, an older neighbourhood of Orange County, California,

home to a traditionally majority-Latino community (78 per cent Hispanic: US Census Bureau, 2010). Adjacent to higher-end municipalities like Irvine and Newport Beach, Santa Ana remains primarily a lower-income working-class community with a per capita income of $16,613 and the nation's ninth-highest population density (US Census Bureau, 2010).

There is language in the Renaissance Plan that evokes resilience thinking

> Cities are dynamic and ever-changing places that experience many cycles of growth over time. Cities with long and distinguished histories, such as Santa Ana, often find themselves needing to guide this change so that existing strengths can be reinforced and appropriate change can be realized (City of Santa Ana, 2007, p. 1:1).

The goals of the Renaissance Plan were broadly appealing—improve employment and income prospects for both current and incoming residents and attract a variety of businesses that would be resilient against global economic downturns. The plan's

vision of walkable streets, mixed uses and low-intensity forms is codified in a regulating plan and detailed set of form-based codes that specify rather determine architectural and geometric templates. As argued in the text of the plan

> This plan works in every way to recognize and enable traditional neighborhood development of varying intensities, including transit-oriented and commercial districts, through a tailored vision, policies and regulations. This plan is based on a set of integrated principles that have produced the best places and cities throughout the world (City of Santa Ana, 2007, p. 1:7).

Previous analysis (Gonzalez and Lejano, 2009) critiqued the strong universalist New Urbanist template that is being applied to diverse neighbourhoods throughout the country. The same analysis found that the nature, look and culture of the present neighbourhood, such as the culturally important La Cuatro district (see street scene in Figure 1), were hardly represented in the new plan. In the terms we have laid

Figure 1. La Cuatro district, Santa Ana, California.
Photo: reproduced with permission from Erualdo Gonzalez.

out in this article, the plan did not exhibit plurivocity.

In one of the few mentions of Santa Ana's predominantly Latino community, the Renaissance Plan states

> Downtown Santa Ana is a thriving commercial district located in one of the wealthiest counties in the United States and offers a broad range of goods and services focused primarily towards the Hispanic community. The downtown's few but influential 'one-way' streets and limited left turns restrict local accessibility and likely frustrate potential shoppers. The northeast quadrant of the plan area has direct frontage to I-5 and the Santa Ana interchange that would be attractive to regional and national retailers but not necessarily the same that would be attracted to downtown. Santa Ana is surrounded by a wide range of demographics, including many high income households (City of Santa Ana, 2007, p. 1:2).

The plot of the narrative, then, rests on the notion of a stagnant present condition and an unfulfilled promise that stems from the untapped reservoir of consumer demand from interests not presently found in Santa Ana. The plan then spells out a vision for claiming a higher position in Orange County and, in the plan's language, becoming a transit-oriented district that could become 'Orange County's downtown'.

While the Renaissance Plan formally involved a design charette and more than a hundred public sessions, it incurred resentment from some community residents, businesses and advocates. Anti-redevelopment sentiment was easily found—in one case, residents wore pins that said "Stop Ethnic Cleansing!" (Gonzalez *et al.*, 2012). One local writer, pondering over the architectural styles encoded into the plan, wrote

> Notice a pattern? With the exception of the last one (which is the preferred style for

overpriced lofts nationwide), each had its heyday before World War II—which, in SanTana history, was a time when everything was wonderful and the darkies and brownies couldn't enter certain restaurants, had to live in certain neighborhoods, and got to go to the balcony to see movies (Arellano, 2010).

These statements are indicative of a sense of alienation. Gonzalez and Lejano express it in these terms

> The term 'Renaissance' invokes not just rebirth but, consistent with new urbanist tenets, a reclamation of glories of the past. … references to the past in narrative, form, and image refer largely to history preceding World War II before the transition of Santa Ana to a largely Spanish-speaking, immigrant, and working-class city (Gonzalez and Lejano, 2009, p. 2956).

The appeal to the myth of a golden age or paradise lost is often found in policy narratives, especially those of renaissance. However, as de Neufville and Barton pointed out, myths can also

> provide rationalizations that turn attention away from theory and intractable issues, uncomfortable realities, and discrepancies between public values and actual conditions (de Neufville and Barton, 1987, p. 184).

Not that the downtown redevelopment plan did not have strong advocates in the community (discussed in Rojas, 2011). Some felt that early changes, such as the artists' village, were positive (Nasser, 2005). Yet the plan, its language and narrative, did not reflect the diverse voices and lived experiences of its residents. It is not evident how design charettes and public hearings in Santa Ana allowed community any significant voice over the design (Gonzalez and Lejano, 2009). Researchers question the absence of

measures specific to the needs of the existing working class or the preservation of cherished elements of the *barrio* (Gonzalez and Guadiana, 2012). This absence leads us to the ask what practices might enable community members to place themselves within a preferred resilient future and then act to bring this future into being, questions which we consider next.

Los Angeles River Restoration

In a case that is perhaps emblematic of social and ecological tensions faced by the 21st-century coastal city-region, the Los Angeles River serves to illuminate the ways that scales of governance essential to urban resilience are understood and enacted through narratives. The recent movement to renew the river's role as a life-giving element in the social and ecological systems of the urban region (Wessells, 2010) is occurring through a shift in the scales at which the river is known, experienced and governed. One way to understand this shift is by considering the river narratives that emplot individuals and communities within particular relationships.

The move to engineer, channelise and encase the river in concrete was accompanied in the second half of the 20th century by the construction of a foundational narrative (Sandercock, 2003b) that paints the watercourse as capricious, threatening and destructive to the interests of human residents throughout the region. A flood-prone stream in the midst of a rapidly urbanising region, the river frightened citizens and ruined them financially when its raging waters destroyed infrastructure and property in the early 1900s. A longtime resident recalls that his parents "went down to the LA River, and counted houses, floating down the river during the floods" (KCET, 2012). Residents were shocked by the "deep

rushing water that seemed almost to threaten our feet" (Bartlebaugh, 2011) and called for its taming and control. This unifying narrative maps onto and reinforces a governance scale at the level of the region and the nation-state. The river's devastating ecological force is a basin-wide phenomenon, socially constructed as a national economic threat warranting the intervention of the US Army Corps of Engineers in the 1930s (see Gumprecht, 1999). Through this foundational narrative, local citizens 'scaled up' responsibility for and relationship with the river and assented to the external control, if not outright erasure, of the river as a living element in the social ecology of the region.

Cracks in the foundational narrative emerged half a century later, when artists and non-profit activists started a movement in the mid 1980s to reclaim the river, pledging to "speak for it in the human realm" (MacAdams, 1995)—implicitly pointing to the collective narrative function underlying urban natural resource management. The river movement in Los Angeles has since grown into a robust network of individual and organisational actors, including government, non-profit, business, activist and neighbourhood groups. This growth has been accompanied by narratives that reconstruct the local governance scale as significant and meaningful, and emplot *multiple* citizen voices into relationship with the river.

Deconstructing the foundational narrative is itself a storytelling move, acknowledging the abnegation of social-ecological responsibility that takes place by pushing the scale of river governance off to federal flood control engineers: the city had 'turned its back on the river' (see for example, Golding, 1998). Such a turning-away action signifies a broken relationship with the work, uses and livelihoods that the river once supported, as well as with the

Figure 2.   Alternative future of the urban flood control channel.
Source: Los Angeles River Revitalization Master Plan (2007); Mia Lehrer + Associates, Wenk Associates, Inc. and Civitas, Inc.

sustaining health and vitality of the river system and natural environment. This rhetorical move indicts and thus engages a broad network of urban interests and actors. It is a call to action common to the river revitalisation movement around the world; the implied next step in the narrative arc is a turning *toward* the river, a righting of wrongs, a facing, re-engagement and transformation.

New narratives, guiding the turning of citizens towards the river, are still under construction (Wessells, 2007). This reconstruction is broadly signalled by the formation and implementation of the Los Angeles River Revitalization Master Plan, a process which began in 2005 with the official river booster imperative to turn from back-to-front, and "transform our river from a neglected backyard to a beautiful and welcoming front yard" (Reyes, 2004; see Figure 2 for a possible river future from this plan). The yard metaphor promises plurivocity, as opposed to the imposition of a singular, manicured interpretation.

This is evident in a recent collaboration between the Los Angeles River Revitalization Corporation, founded to support the implementation of the 2007 Master Plan, with the

local public television station, KCET. Through a series of events, programmes and online spaces, KCET has helped to collect, curate and present the stories of dozens of urban citizens seeking to define and emplot themselves into the river's emerging narrative.[1] In so doing, they are reconstructing the scale of governance where the river is understood and managed, and restoring not its native ecology—not yet—but rather the human relationships with the river at the region's centre. In these narratives, urban citizens recognise and celebrate a river that is real to them, at the immediate, local scale. According to one local activist, working with each of these communities is essential to the Revitalization Master Plan's success

> You got developers, you got architects … but the river touches so many communities … Get each community to give its own flavor, its own touch, that really gets people to feel like, this is ours (Rodriguez, 2011).

As more citizens of the urban region articulate a story of their relationship to the river, and the scale of governance where the river is managed is reconstructed to become increasingly local and variegated, the new

narratives reflect a sense of urban nature as less external and distant and more familiar and knowable. As a Los Angeles Urban Ranger puts it, while the natural world is frequently treated by urban citizens as something "out there, like Yosemite", coming into contact with the river builds a "sense of wonder and discovery, of your everyday landscape" (KCET, 2012). The river seems to reframe various individuals' expectations of urban natural resources and, as a result, their sense of connectedness to a wider ecological web: a participant on an evening fieldwalk noted, "My impression of the LA River has always been a bad one … but I've noticed the wildlife, and the goodness of it" (KCET, 2012); and a resident reflecting on a play staged in the river pointed out

> We didn't really think too much about the environment—that's someone's else's job, that's not ours, we live in the city—and then realizing, we all need to be part of this (Dominguez, 2011).

The emerging plurivocal narrative does not necessarily replace the foundational story of the river's extraordinary regional flood potential—if anything, ongoing urbanisation and more frequent extreme weather events have increased this danger—but rather, unsettles and complements this unitary narrative, with its external locus of control and responsibility, with a more porous and experiential scale of recognition and relationship. Thus, the local networks of river governance are reconstructed as meaningful to the thousands of citizens who must ultimately enact the region's resilience, or lack thereof.

Fire Learning Network

While the Los Angeles River case study demonstrates the potential of emergent and plurivocal narratives to unify and direct

collective action without explicit planning co-ordination, our next case illustrates a more purposeful effort to create a shared narrative in order to mobilise a community to action within a broader matrix of institutional deadlock. The case shows how planners can design collaborative settings where narrative construction can take place, as well as facilitate interaction within and between communities who are co-ordinated for a common purpose, despite the absence of direct social interaction or geographical proximity. While this narrative formation is more structured than the stories of the LA River basin, the emplotment of characters, places and actions through time gave rise to plans that were coherent with a co-ordinated logic about restoration while remaining plurivocal and animated by local conditions and values.

The case examines the US Fire Learning Network (FLN), an effort led by the US Forest Service (USFS) and The Nature Conservancy (TNC) to reorient fire management toward ecological restoration and community protection (Butler and Goldstein, 2010; Goldstein and Butler, 2009, 2010a, 2010b). The FLN focuses on wildlands and the human settlements at their borders or scattered within. These settlements have a tense relationship to adjacent wildlands not only because they might also be burned, but also because they rely on forest products, direct employment, housing and recreational opportunities, and ecosystem services such as water supply. As with flooding of the Los Angeles River, burning is a fundamental process that highlights the interconnection and mutual interdependence of social-ecological systems.

The FLN began after a series of destructive wildfires in the early 2000s, which increased federal funding and willingness to try new approaches to restoring fire-adapted ecosystems. FLN's co-ordinators
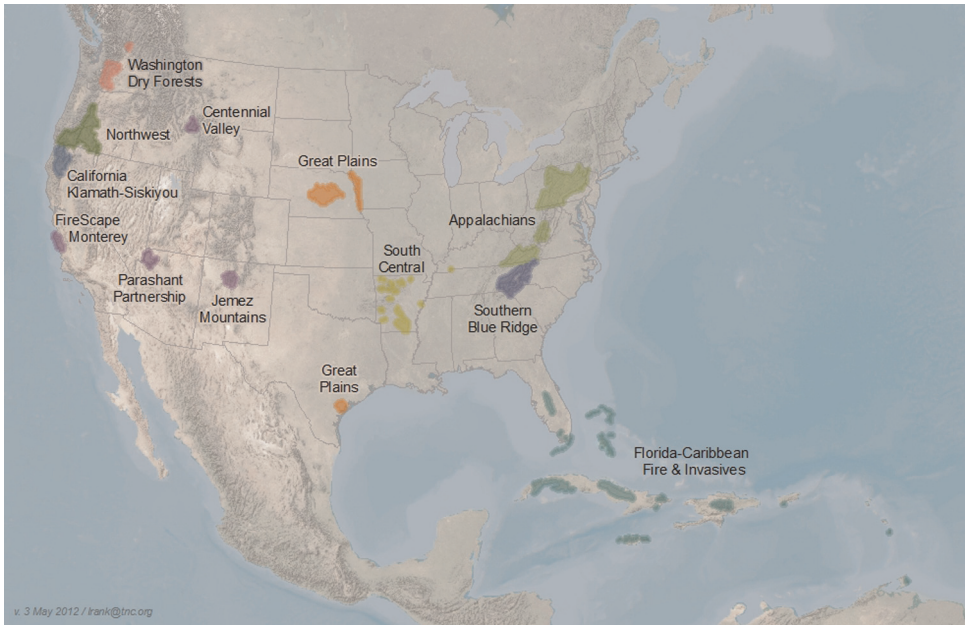
Figure 3.   Active US FLN landscapes and regions in 2012.
Source: courtesy of FLN Director.

organised hundreds of fire managers around the nation into landscape-scale learning co-operatives that spanned anywhere from tens of thousands to millions of acres (see Figure 3), across jurisdictions and ownerships. For example, the Onslow Bight landscape in North Carolina covers more than 1.3 million acres and includes lands managed by the Department of Defense, USFS, TNC, North Carolina State Parks, North Carolina Department of Wildlife Resources and the US Fish and Wildlife Service, and encompasses towns and cities, including Wilmington, Jacksonville and New Bern.

Using structured planning exercises, FLN co-ordinators guided participants in each landscape through emplotment, constructing narratives that situated partners within an arc of conflict, crisis and resolution (Goldstein and Butler, 2010b). Participants were encouraged to draw on the best available science as well as practical managerial knowledge to develop these restoration plans. Each landscape's narrative was patterned on a 'golden age lost' archetype that began before European colonisation, when both aboriginal and naturally ignited fires maintained healthy forests. Fire exclusion throughout the 20th century then brought on decline, changing the composition and structure of ecosystems and raising the risk of catastrophic fire. Battalions of firefighters on the front lines of wildfire fall from grace when viewed through this ecological lens. In the present, ecosystems were portrayed as altered beyond their capacity to recover without help. Positioning themselves at this low point in the narrative arc, fire managers developed two alternative futures. One sustained the *status quo* of fire suppression, increasing risk of fire and further degrading ecological health. The other restored natural fire regimes.

The moral tension of these fire stories lay in choosing between complicity through

inaction versus righting past wrongs by undoing a century of fire suppression. Planning documents developed by each landscape collaborative described institutional barriers to fire restoration as principal obstacles on the path to improved ecological conditions, and fire managers were cast as key agents of change. Protagonists of their own story, fire managers developed strategies to remove administrative barriers so that they could judiciously apply fire to protect communities and heal landscapes. Implementation of their plans would complete the narrative archetype of 'golden age restored', as fire managers reclaimed the heroic identity denied to them within the declensionist narrative of fire suppression and forest decline.

As managers redefined the meaning of professional practice, they regained a sense of common purpose and orientation for action. Storytelling helped to forge a common purpose, develop a shared repertoire of knowledge and skills, and lay the groundwork for collaboration by requiring managers to work together across jurisdictions (Goldstein and Butler, 2009, 2010b). FLN's co-ordinators reinforced these connections by publicising exemplary efforts and providing shared tools for spatial analysis and display. Common tools and analytical frameworks helped FLN landscapes to understand one another's stories and this familiarity gave participants a sense that they were part of a national community, despite not knowing all the members of the far-flung network (Goldstein and Butler, 2009).

The FLN fostered resilience by building solidarity around a new professional identity, developing skills and knowledge to support that identity and creating relationships that increased collective capacity. The FLN's 'golden age restored' narratives were plurivocal across landscapes, while coherent with a co-ordinated effort to develop plans to renew ecosystem functions. The learning network began to alter the deeply engrained institutional culture built around fire suppression by enhancing each landscape's ability to understand the often subtle and deeply rooted obstacles to pursuing alternatives and begin reconfiguring responsibility and accountability so that change could occur.

Resilience Narratives

Considered together, our three cases show that a crucial part of collaborative storytelling is determining what to make resilient, what are desired outcomes and what are obstacles to achieving these preferences. Collaborative planning stories are both descriptive and normative, making sense of the world while providing guidance for change amidst turbulence and uncertainty (van Hulst, 2012). A plurivocal storytelling framework allows people to tell an inclusive story that takes into account distinct circumstances and situated knowledge while facilitating connection among diverse participants operating in different places.

Taken simply as a long collection of specifications, the Santa Ana new urbanist Renaissance Plan posed few problems. Yet it was a different matter when we peered into the foreboding meanings that these specifications for gentrification had for some residents. Part of its threat lay in its univocality—by not allowing counter-narration, the Renaissance Plan only allowed residents to defend a *status quo* that they may wish to change, given an opportunity to imagine alternatives. The case illustrates how generalised templates for enhancing resilience through transformative change can undermine the experience and shared meaning of those living in a city. Displacing the focus from political 'what to do' questions to technical 'how to' questions, these stories erase differences while reinforcing

mutually beneficial relationships between planners and the powerful. Resilience may be diminished through the myopia of planners following the latest utopian ideal in a field whose history has been defined by such idealism.

Our two subsequent cases illustrate that knowledge required for resilience is both particular to a community and is expressed and reshaped collectively. The stories of a misguided past and envisioned transformation in the future that emerge from the FLN and LA River cases were more than a means to pursue system guidance through data gathering, analysis and selection of an optimal alternative. Participants relied on a plurivocal narrative framework to engage one another and identify shared goals. As they explored possibilities for change, they developed a better understanding of the constraints and dependencies that shaped their conception of what was possible to achieve. The temporal and spatial context and positioning of their stories enabled each community to develop new relationships and revise assumptions underlying institutional norms, rules and practices. Their narratives enhanced possibilities for resilience by providing a framework for reshaping both knowledge and knowers.

In LA, a river had become an eyesore that exacerbated flash floods within its concrete channels and swept rainwater out to sea in a region renowned for water scarcity. However, these crises and concerns could not bring stakeholders together to promote change until they began to talk about how they would 'turn toward' the river. Stakeholders began to rethink the river's meaning and use in terms that made sense to themselves as flood control engineers, economic development officials, neighbourhood leaders, recreation advocates and social justice activists. An essential feature was this story's open and undefined character, which could engage a multitude of

perspectives from a variety of settings. The success of river advocates in shaping a plurivocal narrative underscores the power of story to promote resilience across the scales of a 'panarchy', engaging different levels without attempting to compel centralised co-ordination.

Differences within and between the landscapes of the Fire Learning Network also had stymied efforts to reorient fire management toward ecological fire restoration, despite recognition that fire suppression often increases fire incidence and magnitude, ecological harm and community vulnerability. Forging 'golden age lost and restored' narratives in each landscape enabled complementarity across widely dispersed landscapes. Fire managers were conscripted in their landscape's particular narrative of decline and redemption while connecting them to a greater whole as they identified with the roles, values and knowledge of ecological restoration. Coherence was not a product of an integrated plan, but rather an emergent quality of a nationwide collection of plurivocal narratives. Joint storytelling disrupted old assumptions and engendered new routines, laying the groundwork for institutional change by enabling fire managers to speak autonomously with a unified voice.

These cases show that resilience as situated in community action is better understood as a process or relationship rather than a property—one that can be framed to permit alignments and divergences between different perspectives. Urban communities enhance resilience by making sense of their present conditions and possible futures, combining collaborative problem-solving coupled with reflective analysis-in-action (Lewin, 1946) to accommodate diverse knowledges and align on a shared future without eliding essential differences. Plurivocal narratives are partially shared, allowing for differences in standpoint,

characters and plot. As they tell their stories, participants reconfigure individual and collective identity by revising their relationships with each other and reshaping their knowledge and assumptions.

Roles for Planners

Considered together, the LA and FLN cases underscore that planners can help communities to create resilience narratives that guide efforts to recombine existing structures and processes and promote system renewal and emergence of new trajectories. The skills that planners have developed to facilitate stakeholder-based collaboration can also help to enhance resilience through collaborative storytelling, since good facilitation can promote trust and empathy, an understanding of interdependencies and capacity for individual and social learning (Kaufman, 2011). In addition, new network facilitation skills are needed to promote common narratives across space and time, tying together disparate sites, organisations and jurisdictions. Both cases provide examples of this kind of network leadership. The non-governmental organisation Friends of the Los Angeles River (FoLAR) helped to link seemingly disparate river activities by simultaneously engaging in the language and work of activism, technical research and governmental action. The FLN was a more actively facilitated effort at promoting a common narrative. Rather than imposing uniformity by prescribing interaction among participants, FLN co-ordinators engaged in what one called "netweaving", travelling across the network to provide technical assistance and enhance cross-site consistency and communication.

In addition to providing facilitation skills, organisers often need to help communities operate effectively in the political margins, using techniques that are less state-oriented and managerial and more akin to the struggles of social movements. As the resistance of old-guard fire managers and the early years of river activism in Los Angeles attest, even weakened institutions can blunt efforts to pursue social-ecological resilience when changes threaten the perogatives of the powerful (Allison and Hobbs, 2004). In addition to challenging elite preferences for stability and continuity that may be embedded in the *status quo*, planners can help communities to engage with different kinds of resilience and identify whose resilience should have priority. What is needed in Santa Ana may be a visioning effort that can challenge the powerful vision of New Urbanist renewal with a counternarrative of community resilience and rebirth that enables residents to tell partially shared stories and weave together their experiences into a collective life.

Conclusion

Social-ecological resilience informs planning at the dynamic interface of persistence, adaptation and transformation. This flexible response to uncertainty and discontinuity can help to chip away at the assumptions about equilibrium, forecasting, predictability and control that stubbornly hang on in planning theory and practice. Resilience thinking also enables us to highlight the critical impact and dependence of cities on ecosystem processes. Lack of attention to these linkages between urban needs and ecological functions such as soil, climate, freshwater supply and biodiversity has led to degradation so extreme that many past cities were abandoned altogether (Grimm *et al.*, 2000). Concerns are now emerging at a different scale as we push the planet out of its current stable state, the Holocene period that began with the first permanent settlements 10,000 years ago. As we move into

the Anthropocene, cities will be where most decisions and actions occur that impact climatic, geophysical, atmospheric and ecological processes that define critical 'hard-wired' thresholds in the Earth's environment outside which existing social and ecological systems cannot function (Rockstrom *et al.*, 2009).

We argue that narrative is an essential element in the formulation and maintenance of urban systems. Narratives help to define the scale at which socio-natural relations are experienced, understood, enacted and sustained, as in the Los Angeles case; and they can transcend and move across scales in a way that enables dramatic shifts in the rationales and practice of natural resource management, as in the Fire Learning Network case. Urban resilience signals a capacity to self-organise at various scales and to adjust behaviour in order to adapt to and transform emergent conditions—including the scale of appropriate action. Stories are carriers of our interpretations and rationales, and help us to account for how our urban worlds are arranged as well as how they might be deliberately adjusted and transformed (Lejano *et al.*, 2013). Narratives enable human actors to do this across various ways of knowing and existing patterns of action, making them particularly powerful and accessible (Lejano *et al.*, 2013). Moreover, narratives can articulate a collective identity that transcends spatial and temporal limits, shaping a community of otherwise disparate voices into a coherent and plurivocal vision of the future (Goldstein and Butler, 2009).

While this article has underscored the limits of analytical resilience thinking as a means to engage communities, we do not do this in order to detract from the fundamental spirit of the enterprise. On the contrary—we are arguing that interpretive planning research is a necessary addition to resilience as a transdisciplinary field if resilience scholars and practitioners want to understand urban systems and inform transformative change, an objective that is irreducibly political and conflictual. Systems analysts provide useful diagnostic tools in this setting, working with communities to help describe adaptive cycles and regime shifts, to identify memory in the system that can help restart cycles and to enumerate drivers of change and disturbance events. However, communities need to tell their own stories in order to identify system properties that are meaningful and compelling and enhance their personal and collective agency. They need to decide what will be made resilient, what are desired outcomes, whose resilience should have priority and who plays what role in transforming things for the better.

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Note

1. See for example, a city-wide competition, "Songs of the LA River"; http://lariversonger.posterous.com.

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