Bringing People Back In: Crisis Planning and Response Embedded in Social Contexts

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Abstract Urban resilience requires sophisticated technical expertise to anticipate problems and develop transformative solutions, yet these efforts alone are often insufficient. We argue that resilience work needs to acknowledge the social contexts in which these plans are situated to better identify potential pitfalls and negotiate challenges "on the ground." Drawing on Zukin and DiMaggio's (Structures of capital: the social organization of the economy. Cambridge University, Cambridge, pp 1–36, 1990) embeddedness framework, we explain how cognitive, cultural, structural, and political contexts can complicate resilience work. First, we describe the framework and draw on extant literature to show how the four dimensions relate to urban resilience. Then, we use case studies from two environmental disasters to illustrate how emergency response efforts fell short because they did not adequately account for social context. Our aim is to orient urban resilience experts and practitioners to embeddedness thinking and offer suggestions for ways to better negotiate obstacles to success and opportunities for improvement inherent in the social environment.

1 Introduction

There is little chance that planners, experts, and engineers can create new and more resilient communities until we transform the way we plan for, prevent, and respond to disasters. Too often our efforts fall short (Kapucu et al. 2010). For example, there is near consensus in the literature that the devastation following Hurricanes Katrina and Rita in 2005 was amplified by the failure of agents and organizations to work effectively together and with the communities affected before, during, and after the hurricanes. A successful approach to urban disaster planning and response is one

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where networks between various actors channel information, resources, and skills so that needs are identified and met quickly and efficiently. But it is difficult, because these networks are often embedded in communities that are embedded in larger social systems, and different actors have different pieces of information with different solutions to different problems (Nowell and Steelman 2014). Putting this together for an effective preventive strategy or response is a formidable challenge for those who manage these efforts.

Our intuition is that most experts know that their efforts are embedded in social contexts, but tend to ignore this and neutralize 'human irrationality.' In this volume, Marumaya (Chapter "Taxonomy and General Strategies for Resilience") notes that there are multiple stakeholders involved in these processes and they play a key role; Legaspi (Chapter "Perception-Based Resilience: Accounting for Human Perception in Resilience Thinking With Its Theoretic and Model Bases") shows that people's perceptions are very important. But the social context is more than an array of utility maximizing atomistic stakeholders with different preferences. Serious consideration of the social context is warranted because people have values, beliefs, norms; have ties to one another and are members of groups; are subject to political authorities; and are far from omniscient. For urban planners, the shift toward inclusive governance models involving citizens, non-governmental partners, and local governing bodies makes the cultural values and priorities of stakeholders especially pertinent to planning efforts (Blomgren Bingham et al. 2005). Similarly, measures of urban resilience, as Ilmola (Chapter "Measurement of Urban Resilience") and Sharifi (Chapter "Urban Resilience Assessment: Multiple Dimensions, Criteria, and Indicators") acknowledge, should consider the social and cultural dimensions of coordination with and between government agencies and institutions. As Holden and colleagues (Chapter "From Resilience to Transformation Via a Regenerative Sustainability Development Path") suggest, resilience thinking should not only be framed in terms of ecological risk, but understood as part of an inherently political process. Likewise, we suggest that orienting planners, scientists, decision-makers, first responders, and community members to social realities offers a way to better anticipate problems and develop truly transformative plans and strategies.

Social science critiques of urban planning are not new. Jacobs (1961) offered an early, poignant critique of planning practices, such as zoning laws and suburban development. Writing in an era of urban decentralization, she argued urban decline was the unintended consequence of misguided planning strategies. She called for planning based on how cities and their dwellers actually operated, rather than on assumptions about human behavior. This chapter offers a similar critique and suggests that to formulate transformative responses to urban disasters resilience initiatives need to consider how people actually understand and navigate their urban environments.

More specifically, the paper sensitizes urban resiliency experts and professionals to the various cognitive, cultural, social structural, and political contexts in which they operate using an embeddedness framework. We outline the embeddedness framework and present examples of how planning efforts were stymied or

emergency responses failed because those in charge did not adequately account for elements of social context. Our aim is not to articulate a grand theory, but rather to present examples of how dimensions of the social context relate to and complicate disaster planning and response. We conclude by offering suggestions for how planners, technocrats, relief workers, and first responders might better negotiate these contexts in which they operate.

2 The Embeddedness Approach

The idea of embeddedness was first articulated by Polyani (1944) as a critique of neoclassical economics, and later extended by Granovetter (1985) and Zukin and DiMaggio (1990). The original formulation argued that economic action cannot be understood without recognizing that behavior is contingent on cognitive, cultural, structural, and political contexts. The idea of embeddedness has now been applied to organizations (Dacin et al. 1999) and disaster planning (Iversen and Armstrong 2008). This chapter builds off these efforts.

The embeddedness framework is useful for situating urban resilience strategies because it goes beyond saying that 'context matters' and identifies four dimensions that shape action: cognitive, cultural, structural, and political embeddedness. We use Zukin and DiMaggio's (1990) conceptualization proceeding from the micro to macro, but emphasize that they are intertwined. Cognitive embeddedness refers to the limited abilities of individuals (i.e., policy makers, city residents, first responders) to make fully rational decisions. Cultural embeddedness refers to the meanings, values, and norms which are operative in a particular domain. This applies not only to cultures within communities but within administrative structures as well. It has implications for policy implementation, civic engagement, and residents' political mobilization for or against resiliency efforts. Structural embeddedness highlights the configuration of relations between individuals, among neighborhood organizations, and between neighborhood residents and organizations and actors outside the immediate community. It also refers to network ties within administrative structures such as between relief organizations or first responders. Finally, political embeddedness refers to the institutional context (e.g., laws, regulations) in which planning takes place as well as the realpolitik that surrounds planning decisions. It includes the logistical challenges of coordinating within and across agencies or groups with different institutional directives or political agendas. Political embeddedness also shines a light on power dynamics that can lead to unequal outcomes for urban residents.

It would be wrong to think of each dimension as independent of one another. Human cognition is embedded in local cultures which give cues to actors and provide heuristics, and perceptions, such as those of self-reliance described by Legaspi (Chapter "Perception-Based Resilience: Accounting for Human Perception in Resilience Thinking With Its Theoretic and Model Bases"), are the product of actors' lived experiences. In turn, social structures often are necessary to formulate

and enforce cultural norms (Coleman 1988), and all of social life is embedded in a political environment which sets limits, defines opportunities for action, and stipulates what is legitimate, while political enactment depends upon the consent of the governed and the receptivity of local cultures.

2.1 Cognitive Embeddedness

Cognitive embeddedness refers to the ways in which, "structured regularities of mental processes" limit rational decision-making for individuals and organizations (Zukin and DiMaggio 1990, p. 15). In other words, people use heuristics to perceive, interpret, and act upon information (Gigerenzer and Gaissmaier 2011). This means that people often ignore available information, consciously or unconsciously, to make expedient decisions, especially when faced with uncertainty. "Bounded rationality" also occurs in organizational decision-making such that organizational leaders tend to "satisfice" rather than optimize (March and Simon 1958).

Cognitive shortcuts can lead to deleterious outcomes when planners, technocrats, organization leaders, and first responders fail to recognize pertinent information or they rely on existing heuristics that are insufficient in new scenarios. Weick (1993, 2010) blames a breakdown in cognitive "sensemaking" as part of the reason crises escalated at the Mann Gulch wildfire, where 13 firefighters died, and the Bhopal tragedy where hundreds of thousands of people were exposed to toxic gas. In both cases individuals ignored pertinent information that should have led them to recognize the threats in advance. During Hurricane Katrina, leaders made quick decisions using an existing repertoire of crisis management which was insufficient for addressing the large-scale threat (Comfort 2007). The catastrophic failures of the disaster response were due to the fact that there was no shared "common operating picture" for a coordinated, community response between heterogeneous agencies and organizations even though the threat was recognized in a timely manner (Comfort 2007, p. 193). Medonça et al. (2014) studied reports made by first responders to the Oklahoma City bombing and 9/11 attacks. When aspects of the scenario mirrored familiar aspects of their role (e.g., setting up a perimeter) responders used heuristics to make fast decisions. However, they had to improvise their response with more intentional cognitive processing when the situation called for non-routine tasks. Part of the challenge of transformative urban resilience planning is to develop workable collective, cognitive frameworks a priori that decision makers and first responders can draw upon when recognizing and responding to crisis.

The implication of cognitive embeddedness for urban resiliency planners is that agent-based models are limited to the extent that assumptions about the ways individuals and/or organizations act map on to reality. For example, research on the cognition of space shows that when faced with uncertainty, drivers use heuristic shortcuts to take routes that are "good enough," even though the paths they choose

are not the most efficient (Manley et al. 2015). Recognizing this would mean better planning for emergency evacuation insofar as it captures the ways people actually make sense of and move through unexpected traffic situations. Cognitive embeddedness situates decision making within the limits of human rationality.

2.2 Cultural Embeddedness

Cultural embeddedness refers to shared collective understandings, such as beliefs, norms, ideologies, taken for granted assumptions, and formal rule systems that shape goals and action (Zukin and DiMaggio 1990, p. 17). A considerable amount of research has focused on cultural conflict when the meanings, values, and norms embedded in planning documents, rules, and operational procedures run contrary to neighborhood or occupational cultures (e.g., epistemic communities made up of knowledge based experts or professionals). A famous example is Acheson's (1988) study of lobster fishermen in the U.S. Northeast. Faced with government mandates to conserve, local fishermen resisted, believing (correctly) that the informal arrangements they had worked out to prevent over-fishing were more effective. Well-intended disaster relief efforts often fall short because they are not aligned with the local understandings of what is needed. For instance, in the wake of the tornado in Joplin, Missouri, local private and voluntary organizations managed the influx of volunteers and relief aid to address immediate needs first (Smith and Sutter 2013). "Spontaneous volunteers" have been known to travel great distances, often without sufficient knowledge of local conditions and customs that can become a challenge for onsite organizations and agencies to manage (Merchant et al. 2010; Sauer et al. 2014). The importance of local cultures has also been well-documented as they impact local residents after crisis (Erikson 1976). For example, studies of post-disaster resettlement find that residents experience enhanced trauma due to place-attachment (Oliver-Smith 1996) and mental health risks following disaster (Norris et al. 2002).

There has been considerable progress in trying to understand more deeply the nature of local cultures. In terms of resilience planning, Colten et al. (2008) emphasize the importance of the role of inherent resilience which they define as, "practices that natural resource-dependent residents deploy to cope with disruptions and that are retained in the collective memory" (p. 4). This idea of an informal resilience that is developed and retained within social spaces can be expanded to include a broader set of cultural practices more closely resembling Zukin and DiMaggio's (1990) concept of cultural embeddedness. However, these informal cultural resources often are at odds with formal disaster preparedness planning, especially when a top-down approach is utilized. In these cases, conflict is likely to occur between resident behaviors and state expectations, as was seen in the aftermath of Hurricane Katrina (Elliott and Pais 2006).

The framing of issues can also lead to or avert conflict (Snow et al. 1986; Benford and Snow 2000). Building on our discussion of cognition, a frame is a

cultural artifact that people use to make sense of their situation. The focus is on "stories," "facts," and "accounts" that define the problem as something which citizen participation can or cannot solve and articulate justifications for collective action or inaction. In a study of 20 communities that faced large energy infrastructure projects, Wright and Boudet (2012) found that communities suffering economic hardship or with past energy project experience were more likely to interpret the projects favorably and less likely to mobilize even though they faced the same risks as the communities that mobilized. This phenomenon was also evident in the aftermath of the Deepwater Horizon oil spill, where a massive compensation program was put into place without much consideration of local cultural norms, leading to misperceptions of appropriate claims and behaviors as well as community corrosion and infighting among neighbors (Mayer et al. 2015). Research has shown that these frames do not emerge spontaneously. Vasi et al. (2015) suggest there need to be "discursive opportunities" that focus people's attention on a particular problem. In their study of citizen mobilization and local legislation limiting hydraulic fracturing (or fracking) in the Marcellus Shale states, they cite the importance of broadcast technologies to disseminate information about a threat or crisis. For instance, local screening of the documentary Gasland on the environmental effects of fracking was an important factor in prompting citizen response. Social networking (Twitter, Facebook, etc.) also allowed people to share experiences and coordinate responses. These discursive opportunities stimulated conversations where people identified common frames which mobilized the citizens to pass municipal bans on fracking. Thus, in order for planners to capitalize on citizen mobilization rather than incite it against their proposed project or initiative, it would be prudent to be aware of different ways their actions can be interpreted by community stakeholders.

Some communities have a more developed sense of collective empowerment than others. Collective efficacy, coined by Sampson (2012, p. 152), refers to "social cohesion and shared expectations for control" and reflects a sense of collective empowerment at the community-level. It has been linked to improved community outcomes such as crime control, health, civic participation, and children's well-being (Browning and Cagney 2003; Sampson 2012; Sampson et al. 1997, 1999). Thus, from a planning perspective, identifying a community's culture of collective efficacy could be an important strategy for improving urban resilience. It can also tell planners where they may encounter greater resistance.

The natural resource management literature gives us examples where local cultural practices or understandings allowed people to organize and solve problems cooperatively, rather than using a one-size-fits-all approach. For example, agricultural management in central Mali was stymied when on-the-ground definitions of environmental risks differed with government policies, leading to delay and inaction (Crane 2010). Integrating local cultural understandings into resource management planning has facilitated greater agreement and hence more successful management. Studying resource scarcity in the Canadian forest industry, Lyon and Parkins (2013) argue the local cultural system of values is a potential vehicle for collective action to protect the environment. Moving beyond top-down approaches

and incorporating participatory-based models offers potential to incorporate cultural values and norms into planning strategies that simultaneously empower local actors and accomplish the larger goals of urban resilience (see also Adger 2000; Berkes and Ross 2013).

2.3 Structural Embeddedness

Structural (or relational) embeddedness refers to patterns of ongoing interpersonal and inter-organizational relations (Zukin and DiMaggio 1990, p. 18) and builds on work by Granovetter (1985) and Coleman (1988). These ties can be cooperative, or competitive, strong (bonding) or weak (bridging). In fact, the latter are often seen as essential for community action (Granovetter 1973; Hays 2014; Putnam 1993). Trust, loyalty, solidarity, and a sense of shared identity are all constructed from networks of social relations. These ties bind a community together and, at the same time, are sources of friction at a more societal level, e.g., ethno-religious conflicts. Sampson (2012) sees these networks, along with collective efficacy, as crucial in explaining civic participation and political mobilization. Social networks also exist within occupational communities and impact how well planners, technocrats, first responders, and relief workers are able to do their jobs.

The disaster research literature has long recognized that communities come together after catastrophic events (Quarantelli and Dynes 1977) and that local networks are important in recovery (Aldrich 2012). For example, the majority of individuals rescued from collapsed buildings in the 1995 Kobe earthquake were helped by neighbors—not first responders (Aldrich 2012). Likewise, in the aftermath of the 2011 earthquake and tsunami, affected residents regularly claimed to be aided more by neighbors and friends than official programs (Aldrich and Meyer 2014). In the 1995 Chicago heat wave, Klinenberg (2002) found two distinct mortality rates in comparing neighborhoods with high levels of bridging capital, where neighbors helped neighbors and lives were saved, and those with low levels of bridging capital, where many elderly residents died alone in their apartments.

Relational embeddedness also affects how planners, technocrats, first responders, and relief workers do their jobs. Pre-existing interpersonal and inter-organizational networks are especially important, because an effective response is the result of voluntary coordination between different organizations to create a network, rather than the result of bureaucratic controls and planning. Nowell and Steelman (2014) studied the leaders of various organizational units that responded to three different wildfires. They found that communication was more frequent and effective when fire personnel worked with colleagues with whom they had prior familiarity than when they worked with colleagues they did not know. In contexts which are fast-moving, complicated, and critical, stronger ties may be superior to weaker ties and relational embeddedness is superior to institutional embeddedness (e.g., two people occupy the same functional role or work for the same type of agency). In other words, it is not the time or circumstance to be interacting with strangers.

Neighborhoods also include community based organizations (CBOs) as well as individuals and households. Janowitz's (1967, 1969) work on the community press and elementary schools and Alinsky's (1971) accounts of community organization activity in Chicago highlighted the importance of these kinds of organizations for community building. CBOs (e.g., choral groups, bowling leagues, service clubs) can build bridges across various factions or groups within the community by 'mixing up' people with different backgrounds and values (Putnam 2000; Hays 2014). This 'mixing up' will supposedly foster the trust, norms of reciprocity, and sense of collective purpose needed to bring together diverse communities to work on common problems. CBOs can also link residents with economic and political actors outside the community to create a channel through which resources and information can flow (Marwell 2007; Small 2009). Finally, CBOs themselves can work together to solve community problems thus increasing the potential to collaborate when a crisis arises.

Organizations are clearly important in local political mobilization. Vasi et al. (2015) found a positive effect of nonprofit organizational densities on anti-fracking municipal bans in the Marcellus Shale states. Nonprofits can aggregate local demand and give voice to different constituents. Creating norms of reciprocity and trust between organizations can also lead to greater mobilization of resources for populations that can be traditionally difficult to reach, as was the case in the aftermath of the 2014 Indian tsunami, where a coalition of international aid organizations worked together to facilitate the delivery of resources to hundreds of small villages and islands which were otherwise politically isolated (Aldrich 2012).

Clearly both interpersonal networks and the presence of CBOs are important in explaining a community's resilience. Aldrich's (2012) study of the 1995 Kobe earthquake linked qualitative accounts with a panel analysis of recovery over time. Aldrich concluded that social capital was a much more significant predictor of recovery than economic capital. Affected residents overcame common collective action problems by working together, forming their own CBOs (ward associations) to clean up debris, prevent looting, and find and distribute aid. Though these CBOs linked with formal authorities on occasion, the local community mobilization efforts led to swift recovery in neighborhoods where trust and social capital was high.

2.4 Political Embeddedness

Political embeddedness refers to the context of the state, its laws, and the struggles for power between stakeholders (Zukin and DiMaggio 1990, p. 20). Resilience strategies are often commissioned (or at least supervised and directed) by government entities, and increasingly solicit involvement from non-governmental and community-based actors. These activities are shaped, explicitly and implicitly, by the political milieu of a given jurisdiction as the public increasingly expects the government to lead planning and response efforts (Kapucu and Van Wart 2006).

One complication is the intentional use of what Clarke (1999) termed "fantasy documents." These documents are created to fulfill government regulations, but are largely symbolic and have little utility to address large scale crises like oil spills or nuclear disaster. Clarke suggests fantasy documents can sometimes create more problems on the ground because they fail to understand the cultural and structural embeddedness of crisis response.

Collaborative resilience planning models have become increasingly popular to reduce complications. Proponents argue engaging government, non-governmental agencies, and the local community can expedite response time to disasters, tailor planning efforts to local needs, and get buy-in from the community (Blomgren Bingham et al. 2005; Lebel et al. 2006). One U.S. strategy is the creation of interstate partnerships, such as the Emergency Management Assistance Compact, that allow states to assist one another before federal aid can be disbursed (Kapucu et al. 2009). Community participatory governance models, particularly for climate change planning have become increasingly commonplace (Booher and Innes 2010; van Kerkhoff and Lebel 2006; Moser and Ekstrom 2011). For example, Gidley et al. (2009) described how community members brainstormed potential planning solutions successfully in climate-vulnerable areas of Australia. Lebel et al. (2006) studied how coastal communities of Trinidad and Tobago engaged local stakeholders in disaster planning and worked collaboratively with the government regulators to protect marine areas vital to the fishing economy.

For urban resilience planners and responders, one implication of the shift toward collaborative approaches means there are more parties involved. Coordinating planning and response between multiple governmental and non-governmental agencies at different levels of jurisdiction, even across national borders, can be exceedingly complex (Kapucu and Van Wart 2006; Kapucu et al. 2009, 2010). This is evidenced by a large body of research in public administration that focuses on corralling different bureaucratic institutions to respond swiftly and efficiently to man-made or natural disasters (Comfort and Kapucu 2006; Kapucu 2012).

Moreover, planning and participation dynamics are not power neutral. "We not only need to ask: The resilience of what, to what? We must also ask: For whom?" (Lebel et al. 2006, p. 18). Critics point to the "illusion of inclusion" when community stakeholders are impotent; contributing in name only (Few et al. 2007). Even when empowered citizen action groups demand participation in planning and implementation, this does not mean that this applies to or will benefit all citizens equally. Scholars of the political economy of place have long noted the unequal distribution of resources across cities and the role of governments in perpetuating and reproducing those inequalities (Harvey 1973; Logan and Molotch 1987). This line of thinking can be readily extended to our discussion of urban resilience. Resilience planning and crisis relief is subject to a multitude of considerations at numerous levels of government (Cohen and Werker 2008). These various actors may not be well-coordinated or may be acting out of self-interest rather than in the best interests of the public. Indeed, such scholars note that, "disasters tend to be more severe in poorer countries that are poorly run" (Cohen and Werker 2008, p. 796). Furthermore, studies demonstrate that presidential disaster declarations in

the United States (which disburse federal relief aid) increase in election years and in locations which are more politically expedient (Sylves and Búzás 2007). From planning and prevention to disaster relief efforts, government at its various levels can shape outcomes and the unequal distribution of key resources.

Finally, a prime example of the politicization of urban resiliency is the catastrophic failure of government relief efforts after Hurricane Katrina. Prevention strategies leading up to the event left poor and minority communities more vulnerable to Katrina and its effects, while the relief that followed the hurricane favored the wealthy and well-connected (Kestin et al. 2005; Cohen and Werker 2008). Studies fault various aspects of government for this failure, such as the layered bureaucracy, the over cautiousness in planning and implementation of relief, and political manipulation. Most experts agree that the private sector was more efficient and coordinated in their relief efforts and that government efforts resulted in various negative externalities and inequalities due to political considerations (Depoorter 2006; Shughart 2006; Sobel and Leeson 2006). In reviewing the lessons from Katrina, urban planners have called for greater citizen participation, an understanding of urban planning as a guide rather than a rulebook, increased collaboration across a wider range of stakeholders, and for better attention to policies which may disadvantage some for the alleged betterment of the city as a whole (Nelson et al. 2007).

3 Case Studies

With the embeddedness framework established, we now describe two case studies to illustrate how the various dimensions of embeddedness interact with each other in complicated and often unpredictable ways. In 1972, an area in the coalfields of West Virginia known as Buffalo Creek experienced a deadly disaster when a dam built in the 1940s by the coal mining company to store sludge and other mine waste collapsed after a period of heavy rain. The dam's collapse led to a flood of water and debris that killed 123 people and left 4,000 homeless. Following the flood, sixteen small towns were completely relocated. Former neighbors found themselves moved far apart, resettled into new 'communities' and expected to return to their normal lives. However, later sociological investigation found that the trauma of destroying victims' sense of community was much more psychologically devastating than the experience of the flood itself (Erikson 1976). The relocation effort operated according to efficiency, not community sensitivity, which led to greater collective trauma and community destabilization than the event itself.

A similar pattern follows a more contemporary disaster; the Deepwater Horizon oil spill, the result of mismanagement and risky oil exploration at some of the most extreme depths human engineering has attempted. The escaping oil spread to over 10,000 km of ocean and hundreds of kilometers of shore. The recovery and cleanup efforts were among the largest conducted and the subsequent economic claims program, at over $10 billion, the largest in history. Despite the relatively quick

disbursement of billions of dollars of claims, dissatisfaction and frustration with the claims program ran rampant across the Gulf of Mexico. How could swift compensation for lost wages and property be perceived as a failure on the part of the government and responsible corporate party, BP? Within the Gulf of Mexico commercial fishing industry, a hierarchical economic system ranging from wealthy dealers to working class fishers had existed for decades—informally in some places with cash being paid in place of taxable income. Likewise, the other major economic driver, tourism, was divided along class lines separating service workers from hotel and restaurant owners. The implementation of the compensation program was hastily crafted, with unclear rules and procedures. Residents would regularly report receiving less than their neighbors for identical claims (Mayer et al. 2015). Fisherfolk used to receiving small paychecks were suddenly overwhelmed with significantly larger claims checks, leading to misspending and a lack of investment back into damaged communities. Business owners complained about delayed payments while their staff received smaller, but more regular claims checks leading to high turnover and unfilled jobs. With competition, misunderstandings, and frustration being produced not by the spill, but by the recovery process, many Gulf of Mexico residents blamed the government for the suffering instead of the corporation responsible for the spill in the first place. Lacking a familiarity with local community embeddedness, the most well-intended relief efforts such as the oil spill compensation program can lead to secondary traumas (Mayer et al. 2015).

4 Conclusion

Together, the embeddedness framework and illustrations from disaster relief efforts gone awry provide a useful toolkit that can be incorporated into urban resilience planning and implementation. The problems are complex and require sophisticated responses that tap into cutting-edge advances in technology and engineering. At the same time, the social sciences bring people, groups, and their institutions back into the discussion. What can the professionals responsible for planning for disasters and calamities and response do to better cope with the various contexts in which their activities are embedded and construct truly transformative strategies?

First, planning teams need to identify the key stakeholders in their activities. This will vary by project and community, but knowing who is being asked to contribute resources, who is being asked to change their behavior or absorb costs, and who will be affected indirectly is an important first step. They are the actors one needs to know something about, because they are potentially important sources of new ideas as well as resistance.

Second, planning and response teams need to think more sociologically about the various stakeholders and it is here where the embeddedness framework is especially useful. Instead of just knowing which residents are affected, it is necessary to be aware of their culture, the extent to which they are united, divided, or just indifferent towards one another, their local organizations, and their history,

interests, and political connections. Instead of just knowing which agencies or foundations are funding the project, it is necessary to know their priorities and missions, their current inter-organizational ties to other funders/foundations, planning efforts in other cities, and the rules and regulations that they expect your team to abide by. However, planning teams need to remember that cognition, culture, social structure, and political context are themselves intertwined and feedback upon each other. Thus, putting the puzzle together is not easy given that there are multiple stakeholders and multiple dimensions to each stakeholder's condition.

Finally, planning teams need to anticipate both the benefits (good will, trust, respect) and costs (demonstrations, harassment, lawsuits) which they will realize if they respect or transgress stakeholders' norms or values. This kind of risk analysis is very difficult because it is often hard to know such things as funders' culture, residents' social structure, and the political context in advance let alone calculate outcomes. Yet, we believe that it is better that planning teams struggle with these unknowns than to plow forward indifferent to context. Thus plans need to be flexible and adaptive, and the most cost effective or technically innovative plan is not necessarily the best plan in the long run.

References

Acheson, J. M. (1988). *The lobster gangs of Maine*. Lebanon, NH: University Press of New England.

Adger, W. N. (2000). Social and ecological resilience: Are they related? *Progress in Human Geography, 24*(3), 347–364.

Aldrich, D. P. (2012). *Building resilience: Social capital in post-disaster recovery*. Chicago: University of Chicago Press.

Aldrich, D. P., & Meyer, M. A. (2014). Social capital and community resilience. *American Behavioral Scientist, 59*(2), 254–269.

Alinsky, S. D. (1971). *Rules for radicals: A practical primer for realistic radicals*. New York: Random House.

Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology, 26*, 611–639.

Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society and Natural Resources, 26*(1), 5–20.

Blomgren Bingham, L., Nabatchi, T., & O'Leary, R. (2005). The new governance: Practices and processes for stakeholder and citizen participation in the work of government. *Public Administration Review, 65*(5), 547–558.

Booher, D., & Innes, P. (2010). Governance for resilience: CALFED as a complex adaptive network for resource management. *Ecology and Society, 15*(3), 35–51.

Browning, C. R., & Cagney, K. A. (2003). Moving beyond poverty: Neighborhood structure, social processes, and health. *Journal of Health and Social Behavior, 44*(4), 552–571.

Clarke, L. (1999). *Mission improbable: Using fantasy documents to tame disaster*. Chicago: University of Chicago Press.

Cohen, C., & Werker, E. D. (2008). The political economy of "natural" disasters. *The Journal of Conflict Resolution, 52*(6), 795–819.

Coleman, J. S. (1988). Social capital in the creation of human capital. *The American Journal of Sociology, 94*, S95–S120.

Colten, C. E., Kates, R. W., & Laska, S. B. (2008). Three years after Katrina: Lessons for community resilience. *Environment: Science and Policy for Sustainable Development, 50*(5), 36–47.

Comfort, L. K. (2007). Crisis management in hindsight: Cognition, communication, coordination, and control. *Public Administration Review, 67*(s1), 189–197.

Comfort, L. K., & Kapucu, N. (2006). Inter-organizational coordination in extreme events: The World Trade Center attacks, September 11, 2001. *Natural Hazards, 39*(2), 309–327.

Crane, T. A. (2010). Of models and meanings: Cultural resilience in social–ecological systems. *Ecology and Society, 15*(4), 19–35.

Dacin, T. M., Ventresca, M. J., & Beal, B. D. (1999). The embeddedness of organizations: Dialogue & directions. *Journal of Management, 25*(3), 317–356.

Depoorter, B. (2006). Horizontal political externalities: The supply and demand of disaster management. *Duke Law Journal, 56*(1), 101–125.

Elliott, J. R., & Pais, J. (2006). Race, class, and Hurricane Katrina: Social differences in human responses to disaster. *Social Science Research, 35*(2), 295–321.

Erikson, K. (1976). *Everything in its path: Destruction of community in the Buffalo Creek flood*. New York: Simon & Schuster.

Few, R., Brown, K., & Tompkins, E. L. (2007). Public participation and climate change adaptation: Avoiding the illusion of inclusion. *Climate Policy, 7*(1), 46–59.

Gidley, J. M., Fien, J., Smith, J. A., Thomsen, D. C., & Smith, T. F. (2009). Participatory futures methods: Towards adaptability and resilience in climate-vulnerable communities. *Environmental Policy and Governance, 19*(6), 427–440.

Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. *Annual Review of Psychology, 62*, 451–482.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360–1380.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology, 91*(3), 481–510.

Harvey, D. (1973). *Social justice and the city*. Baltimore: Johns Hopkins University Press.

Hays, R. A. (2014). Neighborhood networks, social capital, and political participation: The relationships revisited. *Journal of Urban Affairs, 37*(2), 122–143.

Iversen, R. R., & Armstrong, A. L. (2008). Hurricane Katrina and New Orleans: What might a sociological embeddedness perspective offer disaster research and planning? *Analyses of Social Issues and Public Policy, 8*(1), 183–209.

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

Janowitz, M. (1967). *The community press in an urban setting: The social elements of urbanism* (Vol. 263). Chicago: University of Chicago Press.

Janowitz, M. (1969). *Institution building in urban education*. Russell Sage Foundation.

Kapucu, N. (2012). Disaster and emergency management systems in urban areas. *Cities*, S41–S49.

Kapucu, N., & Van Wart, M. (2006). Public sector in managing catastrophic disasters: Lessons learned. *Administration and Society, 38*(3), 279–308.

Kapucu, N., Augustin, M., & Garayev, V. (2009). Interstate partnerships in emergency management: Emergency management assistance compact in response to catastrophic disasters. *Pubic Administration Review, 69*(2), 297–313.

Kapucu, N., Arslan, T., & Collins, M. L. (2010). Examining intergovernmental and inter-organizational response to catastrophic disasters: Toward a network-centered approach. *Administration and Society, 42*(2), 222–247.

Kestin, S., O'Matz, M., Maines, J. (2005, December 11) FEMA reimbursements benefit higher income groups, records show. *South Florida Sun-Sentinel*.

Klinenberg, E. (2002). *Heat wave: A social autopsy of disaster in Chicago*. Chicago: University of Chicago Press.

Lebel, L., Anderies, J. M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T. P., et al. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society, 11*(1), 18–39.

Logan, J., & Molotch, H. (1987). *Urban fortunes: The political economy of place*. Berkeley: University of California.
Lyon, C., & Parkins, J. R. (2013). Toward a social theory of resilience: Social systems, cultural systems, and collective action in transitioning forest-based communities. *Rural Sociology, 78*(4), 528–549.
Manley, E. J., Orr, S. W., & Cheng, T. (2015). A heuristic model of bounded route choice in urban areas. *Transportation Research Part C: Emerging Technologies, 56*, 195–209.
March, J. G., & Simon, H. A. (1958). *Organizations*. Oxford: Wiley.
Marwell, N. P. (2007). *Bargaining for Brooklyn. Community organizations in the entrepreneurial city*. Chicago: University of Chicago Press.
Mayer, B., Running, K., & Bergstrand, K. (2015). Compensation and community corrosion: Perceived inequalities, social comparisons, and competition following the Deepwater Horizon oil spill. *Sociological Forum, 30*(2), 369–390.
Mendonça, D., Webb, G., Butts, C., & Brooks, J. (2014). Cognitive correlates of improvised behavior in disaster response: The cases of the Murrah Building and the World Trade Center. *Journal of Contingencies and Crisis Management, 22*(4), 185–195.
Merchant, R. M., Leigh, J. E., & Lurie, N. (2010). Health care volunteers and disaster response—First, be prepared. *New England Journal of Medicine, 362*, 872–873.
Moser, S. C., & Ekstrom, J. A. (2011). Taking ownership of climate change: Participatory adaptation planning in two local case studies from California. *Journal of Environmental Studies and Sciences, 1*(1), 63–74.
Nelson, M., Ehrenfeucht, R., & Laska, S. (2007). Planning, plans, and people: Professional expertise, local knowledge, and governmental action in post-Hurricane Katrina New Orleans. *Cityscape, 9*(3), 23–52.
Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981– 2001. *Psychiatry, 65*(3), 207–239.
Nowell, B., & Steelman, T. (2014). Communication under fire: The role of embeddedness in the emergence and efficacy of disaster response communication networks. *Journal of Public Administration Research and Theory, 25*(3), 929–952.
Oliver-Smith, A. (1996). Anthropological research on hazards and disasters. *Annual Review of Anthropology, 25*(1), 303–328.
Polyani, K. (1944). *The great transformation*. New York: Rinehart.
Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.
Putnam, R. D. (2000). *Bowling alone: The collapse and renewal of American community*. New York: Simon and Schuster.
Quarantelli, E. L., & Dynes, R. R. (1977). Response to social crisis and disaster. *Annual Review of Sociology, 3*(1), 23–49.
Sampson, R. J. (2012). *Great American city: Chicago and the enduring neighborhood effect*. Chicago: University of Chicago Press.
Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*(5328), 918–924.
Sampson, R. J., Morenoff, J. D., & Earls, F. (1999). Beyond social capital: Spatial dynamics of collective efficacy for children. *American Sociological Review, 64*(5), 633–660.
Sauer, L. M., Catlett, C., Tosatto, R., & Kirsch, T. D. (2014). The utility of and risks associated with the use of spontaneous volunteers in disaster response: A survey. *Disaster Medicine and Public Health Preparedness, 8*(1), 65–69.
Shughart, W. F. (2006). Katrinanomics: The politics and economics of disaster relief. *Public Choice, 127*(1/2), 31–53.
Small, M. (2009). *Unanticipated gains: Origins of network inequality in everyday life*. New York: Oxford University Press.

Smith, D.J., & Sutter, D. (2013). Response and recovery after the Joplin tornado: Lessons applied and lessons learned. *Social Science Research Network*. doi:10.2139/ssrn.2261353. Accessed 1 Dec 2015.

Snow, D. A., Rochford, E. B, Jr., Worden, S. K., & Benford, R. D. (1986). Frame alignment processes, micromobilization, and movement participation. *American Sociological Review, 51* (4), 464–481.

Sobel, R. S., & Leeson, P. T. (2006). Government's response to Hurricane Katrina: A public choice analysis. *Public Choice, 127*(1/2), 55–73.

Sylves, R., & Búzás, Z. I. (2007). Presidential disaster declaration decisions, 1953–2003: What influences odds of approval? *State and Local Government Review, 39*(1), 3–15.

Van Kerkhoff, L., & Lebel, L. (2006). Linking knowledge and action for sustainable development. *Annual Review Environmental Resources, 31*, 445–477.

Vasi, I. B., Walker, E. T., Johnson, J. S., & Tan, H. F. (2015). "No fracking way!" Documentary film, discursive opportunity and local opposition against hydraulic fracturing in the United States, 2010 to 2013. *American Sociological Review, 80*(5), 934–959.

Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly, 38*(4), 628–652.

Weick, K. E. (2010). Reflections on enacted sensemaking in the Bhopal disaster. *Journal of Management Studies, 4*(3), 537–550.

Wright, R. A., & Boudet, H. S. (2012). To act or not to act: Context, capability, and community response to environmental risk. *American Journal of Sociology, 118*(3), 728–777.

Zukin, S., & DiMaggio, P. (1990). Introduction. In S. Zukin & P. DiMaggio (Eds.), *Structures of capital: The social organization of the economy* (pp. 1–36). Cambridge: Cambridge University Press.