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The influence of urban development dynamics on community resilience practice in New York City after Superstorm Sandy: Experiences from the Lower East Side and the Rockaways

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ABSTRACT

While (urban) resilience has become an increasingly popular concept, especially in the areas of disaster risk reduction (DRR) and climate change adaptation (CCA), it is often still used as an abstract metaphor, with much debate centered on definitions, differences in approaches, and epistemological considerations. Empirical studies examining how community-based organizations (CBOs) "practice" resilience on the ground and what enables these CBOs to organize and mobilize around resilience are lacking. Moreover, in the growing context of competitive and entrepreneurial urbanism and conflicting priorities about urban (re)development, it is unclear how urban development dynamics influence community-based resilience actions. Through empirical research conducted on the Lower East Side, a gentrifying neighborhood in Manhattan, and in Rockaway, a socio-spatially isolated neighborhood in Queens, we investigate community organizing of low-income residents for (climate) resilience in a post-disaster context. Results show that both the operationalization of resilience – how resilience is "practiced" – and the community capacity to organize for the improved resilience of low-income residents are strongly influenced by pre-existing urban development dynamics and civic infrastructure – the socio-spatial networks of community-based organizations – in each neighborhood. The Lower East Side, with its long history of community activism and awareness of gentrification threats, was better able to mobilize broadly and collectively around resilience needs while the more socio-spatially isolated neighborhoods on the Rockaway peninsula were more constrained.

1. Introduction

When Superstorm Sandy hit New York City on October 29th, 2012, 44 people lost their lives, thousands of people were displaced, and an estimated $19 billion was lost in damages and economic activity (NYC, 2015). Sandy highlighted the vulnerabilities to climate impacts of low-income communities in New York City and gave rise to a visible resilience agenda in NYC (Rosenzweig and Solecki, 2014). Public housing residents were among the populations disproportionately affected by the storm. Many buildings owned by the New York City Housing Authority (NYCHA) lost electricity, heating or hot water for weeks due to the flooding of basement-level heating and electrical systems. NYCHA and other governmental agencies were unable to provide timely and adequate aid to many stranded residents, which prompted a large-scale community-based disaster relief effort (Jaleel, 2013; Schmeltz et al., 2013). After the emergency relief ended, many community-based organizations continued their mobilization and organizing around resilience.

Calls for more climate resilient cities have intensified over the last couple of years (Godschalk, 2003; Leichenko, 2011; Pickett et al., 2004; Rosenzweig et al., 2011). While a growing body of literature has pointed at the inequitable impacts of climate change in urban populations (e.g. Dodman and Satterthwaite, 2008; Hardoy and Pandiella, 2009; Paavola and Adger, 2006), at triggers and incentives for urban climate adaptation (e.g. Adger et al., 2005a; Amundsen et al., 2010b), and assessed municipal

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approaches to adaptation planning (e.g. Anguelovski et al., 2014; Carmin et al., 2012b), more research is needed on the critical dimensions of adaptation interventions (Shi et al., 2016), especially interventions planned and implemented under the new buzzword of (urban) resilience. How do urban community-based organizations respond to municipal actions on resilience, "practice" resilience on the ground, and balance complex – and at times conflicting – priorities to increase the resilience of low-income communities? What factors enable and constrain these community-based organizations to organize for resilience?

This paper attempts to fill this gap through the qualitative analysis of community responses to Hurricane Sandy in two flood-prone, environmentally vulnerable neighborhoods in NYC – The Rockaways in Queens and the Lower East Side in Manhattan (See Fig. A1 in Appendix). These two waterfront districts differ substantially in experiencing the forces of gentrification that characterized New York City development since 2000 (NYU Furman Center, 2016) and in their proximity to the central business district of Manhattan. Results show that both the operationalization of resilience – how resilience is "practiced" – and the community capacity to organize for the improved resilience of low-income and minority residents are strongly influenced by pre-existing urban development dynamics and degrees of what community development scholars call neighborhood "civic infrastructure" (Lang and Hornburg, 1998). Neighborhoods with a long history of broad-based community activism and experience with gentrification's impacts seem better able to mobilize broadly and collectively around resilience, while more socio-spatially isolated neighborhoods lack the civic infrastructure and collective ability to pursue resilience efforts.

The next section briefly summarizes current debates around (urban) resilience. Section 3 describes the research design of this paper. In Sections 4 and 5, we discuss the context of resilience work and interventions in NYC and analyze our results using a narrative approach. Section 6 presents some discussion and concluding remarks.

2. (Urban) resilience: current debates and missing links

Although in recent years the concept of (urban) resilience has attracted significant attention, much of the resilience literature is still centered on definitional debates, differences in approaches, and epistemological discussions (Cutter et al., 2014). Consequently, the concept is often used as an abstract metaphor or a buzzword that hides political struggles or socio-spatial tensions (Davoudi et al., 2012; Stumpp, 2013).

Recent definitions of resilience have broadened from their roots in engineering and ecology (Holling, 1996) to include the opportunities that open up after disturbances in complex systems (Folke et al., 2005) and to incorporate ideas of adaptation, learning, and self-organization. Resilience reflects the degree to which a complex, adaptive system is capable of self-organization and can build capacity for learning and adaptation (Adger et al., 2005b; Olsson et al., 2004; Smit and Wandel, 2006). It includes "*persistence, recovery and the adaptive and transformative capacities of interlinked social and ecological systems and subsystems*" (Elmqvist et al., 2013).

Resilience is often considered as the flipside of vulnerability, as improving the resilience of populations, ecosystems, and infrastructure could contribute to reductions in specific vulnerabilities. (For an historical overview of the concept of vulnerability see Adger (2006). Yet, while some overlap exists between the two concepts (Cutter et al., 2014; Gallopín, 2006; Miller et al., 2010b; Turner, 2010), simplifying them as oppositional states (Chelleri et al., 2015) overlooks the importance of a system's capacity to self-organize and adapt to emerging and unpredictable circumstances (Folke, 2006). In the context of climate change and extreme weather events, resilience is often seen as related to Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA), especially so in urban areas. Today, increasing climate impacts are indeed demonstrating the need for cities to effectively adapt to shifting climate conditions and be proactive at multiple scales while, at the same time, providing basic urban infrastructure and service providing functions (Amundsen et al., 2010a).

Many cities are exploring options and paths to best prepare for climate impacts and risks (Carmin et al., 2012a; Romero-Lankao and Dodman, 2011). While hazard-based approaches focus on applying climate change projections to the local scale in order to identify hazard impacts (Füssel, 2007), vulnerability approaches tend to examine the socio-economic factors that determine the sensitivity and coping capacity of urban systems and societies (Miller et al., 2010a). To an extent, the latter approach sees future climatic conditions as too uncertain to warrant interventions tied to particular climatic regimes.

In order to operationalize climate adaptation, many municipalities around the world develop citywide integrated assessments, with focuses on developing general climate or adaptation plans, and then subsequently delegate mainstreaming and implementation responsibilities to municipal departments (Carmin et al., 2012a). Along the process of climate adaptation, civic participation and partnership building are seen as critical to the accountability and effectiveness of urban adaptation planning (Anguelovski and Carmin, 2011; Aylett, 2010; Carmin et al., 2012a; Chu et al., 2015b; Kithiia and Dowling, 2010; Rosenzweig and Solecki, 2010).

Due to the relative novelty and uncertainties associated with different climate adaptation planning methodologies, experimentation and creativity characterize the ways in which municipalities engage in adaptation on the ground (Anguelovski and Carmin, 2011). In practice, they adapt sectoral and land use policies, infrastructure systems, and urban designs to projected climate impacts (Anguelovski and Carmin, 2011; Anguelovski et al., 2014; Bulkeley and Castán Broto, 2013; Chu et al., 2015a). Cities prepare adaptation interventions, such as flood-protection systems or wetland restoration projects, within broader economic or social resilience strategies (Carmin et al., 2013). Second, they update their building codes, zoning ordinances, land use plans, and capital investment policies to avoid development in risk-prone areas or to raise standards for construction (Cutter et al., 2014). Third, they tend to assess the ability of water or transport infrastructures to withstand impacts and make "climate proofing" investments that attempt to provide "win-win" benefits regardless of climate uncertainties (While and Whitehead, 2013). Following this strategy, some cities are designing mega-projects involving hard (such as dikes) or soft (such as green belts) infrastructures (Sovacool, 2011).

The omission of social, political and cultural dynamics is an important shortcoming of much resilience thinking (Brown, 2014; Davoudi et al., 2012). The question of "resilience for whom" and "for whose interests" is rarely addressed (Cote and Nightingale, 2012; Martin-Breen and Anderies, 2011). As a result, emphasizing "climate proofing" and "win-win" solutions without considering the distributional impacts of such strategies can reinforce short-term solutions and patterns of unsustainable and inequitable development (Anguelovski et al., 2016; Pelling et al., 2014). Additionally, increasing the resilience of a system at one scale or in one time period can decrease the resilience at other scales or time periods or systems (Walker et al., 2004).

There is also a risk that resilience interventions become privileged and private goods, resulting in exclusionary outcomes and (environmental) gentrification in urban distressed neighborhoods (Checker, 2011; Curran and Hamilton, 2012; Dale and Newman, 2009; Shi et al., 2016), which, in turn, can reduce