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K Gotham
R Campanella
J Lewis
F Gafford
Earthea Nance, et al.



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Reconsidering the New Normal: Recovery and Resilience in Post-Katrina New Orleans

Kevin Fox Gotham, Tulane University
Richard Campanella, Tulane University
Joshua Lewis, Tulane University
Farrah Gafford, Xavier University of Louisiana
Earthea Nance, University of New Orleans
Mallikharjuna R. Avula, University of New Orleans

Introduction

In recent years, researchers have used the phrase "new normal" to describe the shift from dysfunction or distress to stability and security following a major disaster. Post-trauma functioning may not be the qualitative equivalent of pre-trauma functioning when there is a need to adapt to an altered environment. For ecologists and social scientists, "new normal" characterizes the period following disasters as a phase of relative stability and routine that replaces confusion, chaos, and turbulence. Ecological and social services exhibit a pattern of (1) relative stability, (2) sudden trauma, (3) complex and chaotic tumult, and (4) relative stabilization, with the last of these stages usually settling at levels deviating from pre-trauma conditions. For human communities, the phrase "new normal" reflects the perception that while many aspects of residents' lives differ substantially from pre-trauma circumstances, their day-to-day endeavors have generally stabilized and suffer less of the perceived and actual uncertainty, disruption, threat, and unpredictability that prevailed during the initial emergency phase. While socio-economic and cultural services (ranging from population return rates, adequate housing, governmental and commercial operations, employment and finances, environmental health concerns, and cultural functions) may indeed have stabilized, they rarely if ever replicate pre-trauma conditions. In other words, circumstances have evolved into a "new normal"¹

Our research project investigates the processes and patterns of post-trauma urban response and development since the Hurricane Katrina disaster of August 2005. The last five years

¹ Karen Albright, and Aaron Panofsky Courtney B. Abrams, "Contesting the New York Community: From Liminality to the 'New Normal' in the Wake of September 11," *City and Community* 3, no. 3 (August 2004): 189-220.

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have witnessed much transformation and organization as New Orleans has struggled in the face of the negative effects of the storm as well as the Great Recession and the Deepwater Horizon oil spill in 2010. On the plus side, the city and region have experienced an infusion of private and public investment to upgrade the school system, rebuild the levee system, and restore the wetlands.² Yet as survivors try to rebuild their lives and communities, new problems and challenges are emerging including threats from extreme events, conflicts over affordable housing, and dearth of investment resources that could impede timely recovery and long-term rebuilding. In addition, New Orleans's high levels of environmental hazard and social vulnerability render it particularly risky for subsequent catastrophe as warming climates and rising seas continue to threaten the region and other coastal cities.³ According to the U.S. Long Term Ecological Research Network (LTER), "Human vulnerability to storms — due to growing numbers of people living in exposed and marginal areas — is increasing the risks associated with climate change, while human endeavors (such as local governments) try to mitigate possible effects."⁴ In New Orleans, risks associated with increasing storm frequency and intensity further complicate post-trauma regional land-use and demographic projections, as well as the sustainability of traditional economic sectors (port, chemical and petroleum, and tourism).

This paper gives an overview of population and demographic trends in three New Orleans neighborhoods since the Hurricane Katrina disaster - Pontchartrain Park, Hollygrove, and the Lower Ninth Ward. Our goal is to trace different patterns

² For overviews see David Overfelt, and J. Steven Picou David Brunnsma, ed., *The Sociology of Katrina: Perspectives on a Modern Catastrophe*, ed. David Overfelt, and J. Steven Picou David Brunnsma (New York: Rowman & Littlefield, 2010); Robert D. Bullard and Beverly Wright, ed., *Race, Place, and Environmental Justice After Hurricane Katrina: Struggles to Reclaim, Rebuilding, and Revitalize New Orleans and the Gulf Coast*, ed. Robert D. Bullard and Beverly Wright (Boulder, CO: Westview Press, 2009); Robert Gramling, Shirley Laska and Kai T. Erikson William R. Freudenberg, *Catastrophe in the Making: The Engineering of Katrina and the Disasters of Tomorrow* (New York: Island Press, 2009).

³ T.E. Tornqvist and D.J. Melfert, "Sustaining Coastal Urban Ecosystems," *Nature Geoscience* 1 (2008): 805-807.

⁴ U.S. Long Term Ecological Research Network (LTER), "The Decadal Plan for LTER: Integrative Science for Society and the Environment," Vol. 24 (Albuquerque, New Mexico: LTER Network Office Publication Series, 2007).

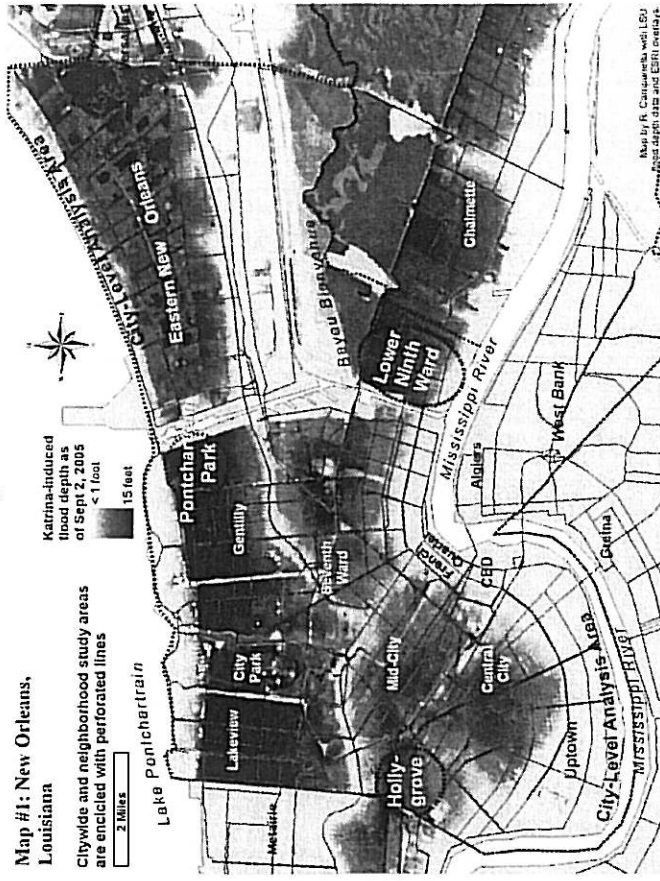
of neighborhood rebuilding and identify current vulnerabilities and problems affecting the pace and trajectory of recovery. We first provide a short description of our methods and data sources followed by a presentation of findings. We then analyze population and demographic trends in the three neighborhoods. The perspectives and findings of our analyses are based on a recently funded National Science Foundation (NSF) Urban Long-Term Research Area (ULTRA) Project in New Orleans. As one of 16 awards, the New Orleans ULTRA project investigates the impact of the trauma of Hurricane Katrina and the ensuing levee breaches and flooding (August-September 2005) on the urban ecological and social systems of Greater New Orleans. The research project uses ecological and social measures to track and characterize the transition from trauma to stabilization. For this paper, we use three fine-grained studies in the neighborhoods to identify variation in the timing, pace, and trajectory of post-disaster neighborhood redevelopment.

Methods and Data Sources

In this study, we will use a mixed methods research design involving (1) an analysis of census data to examine post-Katrina repopulation rates within the city of New Orleans; (2) ethnographic field observations in the Lower Ninth Ward, Hollygrove, and Pontchartrain Park neighborhoods (see Map 1). All three neighborhoods exhibit similar (but not identical) ecological and social conditions, and all three suffered serious (although unequal) levels of trauma during Hurricane Katrina and the ensuing deluge. Each of these neighborhoods is majority African American but they differ systematically in their levels of diversity pertaining to housing type, socio-economic status, land-use, urban design, developmental era, topography, and hurricane and flood damage. We select these neighborhoods for study because (1) they have rich cultural and historical importance in New Orleans; (2) we have accessible data, local contacts, and networks of researchers already involved in the areas under study; (3) they reflect our theoretical considerations in identifying and explaining neighborhood differences in the pace and trajectory of recovery. Thus, we rely on theoretical sampling (i.e., cases are chosen for theoretical, not statistical, reasons).⁵

⁵ Kathy Charmaz, *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis* (Sage, 2006); B.G. Glaser and A.L. Strauss, *The Discovery of Grounded Theory* (1967, New York: Aldine de Gruyter).

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New Orleans neighborhoods are well known for their rich history, long-standing cultural authenticity, and strong family and network connections. Pontchartrain Park is often referred to as the first middle-class African-American housing subdivision in New Orleans. Located in the Gentilly area of the city, Pontchartrain Park was established during the 1950s for a small but growing post-World War II Black middle class that faced a rigid system of Jim Crow segregation. The Lower Ninth Ward neighborhood is a historically working class area that has witnessed much demographic transition over the decades. The fight over school integration in the early 1960s triggered a mass exodus of whites to neighboring St. Bernard Parish. Hurricane Betsy flooded 80% of the neighborhood in 1965, leading to further out-migration by whites and wealthier African-Americans. By 2000, the neighborhood was nearly 95 percent African-American, with poverty rates reaching nearly a third of the total population of around 20,000. Like Pontchartrain Park and the Lower Ninth Ward, the major residential development of Hollygrove took place during the Post-World War II period. Over time, Hollygrove became a predominantly African-American neighborhood. By 2000, the neighborhood was 95 percent African-American with almost 28 percent of its 7222 residents living in poverty.

Since Fall 2009, faculty and graduate students from three universities in New Orleans have been involved in long-term field observations of daily life in the three neighborhoods. Our basic task has been to acquire an appreciation for the nature of life in each neighborhood and examine ways in which residents manage post-Katrina life both experientially and cognitively. Field researchers have spent time with residents in varied settings (at their home, at neighborhood coalition meetings, in surroundings neighborhood stores) and listened and recorded resident opinions about the status of the recovery and rebuilding process. One reason for collecting ethnographic data is to provide a degree of nuance and specificity to uncover how associations observed in the demographic (census) data manifest themselves in residents' daily lives. A second reason is to provide additional, in-depth information to triangulate methods and data sources to enhance validity and reliability. A final reason is to grasp and understand local residents' experiences with post-trauma redevelopment, individually and collectively, and identify the mechanisms that influence different rates of neighborhood recovery.

Results

Our results section aims to describe relevant patterns of recovery and repopulation and explain variation in the timing, pace, and trajectory of post-disaster neighborhood redevelopment. Table 1 provides an overview of population recovery estimates and related demographic data for our study neighborhoods. We include census 2000 data on median household income, population, ethnic and racial population, and percent nonwhite. We also include post-Katrina recovery data from 2008-2010 showing households receiving mail in various months. The table also lists numbers and percentages of households returning based on mail and information from the Road Home program which provides compensation to Louisiana homeowners affected by Hurricanes Katrina or Rita for the damage to their homes. The Road Home program distributes rebuilding grants to three types of homeowners: Homeowners who want to stay in their homes (referred to as "Option 1: Stay"); homeowners who want to sell the home they occupied as of the date of the storms to the state, but remain homeowners in Louisiana (referred to as "Option 2: Relocate"); and homeowners who want to sell the home they occupied as of the date of the storms to the state, and either move out of the state or remain in the state but as a renter (referred to as "Option 3: Sell").

Population Recovery Estimates (as of June 2010) and Related Demographic Data for ULTRA neighborhoods; analysis by Richard Campanella January 2011	Census 2000 Data										Post-Katrina Recovery Data, 2008-2010										Post-Katrina Recovery	
	Median household income, 2000	Total population, 2000	2000 Hispanic ethnicity	2000 white population	2000 black population	2000 Asian ancestry	Percent Nonwhite, 2000	PRE-KATRINA Households receiving mail in June 2005	March 2008	Household receiving mail in March 2008	Household receiving mail in June 2008	Household receiving mail in September 2008	Household receiving mail in December 2008	Household receiving mail in March 2009	Household receiving mail in June 2009	Household receiving mail in September 2009	Household receiving mail in December 2009	Household receiving mail in March 2010	Household receiving mail in June 2010	Household receiving mail in September 2010	Percent of Households returning between June and June 2010, based on mail	Ratio of Road Home Option 3 (rebuilding in place) to Option 2 (sell and move)
Neighborhood Designations																						
ULTRA Lower Ninth Ward including Hill Crest	101,251	19,446	16%	83%	1%	1%	97%	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287	7,287
ULTRA Pontchartrain Park and Gretna Woods (Parks)	133,751	7,701	15%	78%	6%	1%	63%	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974	2,974
ULTRA Midway	119,251	1,221	10%	25%	65%	1%	97%	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661	7,661

Pontchartrain Park

At the time of Hurricane Katrina, there was a stark contrast between the neighborhood characteristics of Pontchartrain Park and many of the city's majority black neighborhoods. For example, many of the majority black neighborhoods were a part of extreme poverty tracts, or tracts where at least 40% of the population lived below the poverty line.⁶ Over the years, the poverty rate in the neighborhood remained fairly low (the poverty rate never exceeded 12%). Various amenities such as tennis courts, a small baseball stadium and a golf course also set the neighborhood apart from other black neighborhoods in the city. The neighborhood also had a reputation for its civically engaged residents and a high percentage of homeowners; as of the 2000 Census, 92% of the residents in Pontchartrain Park owned their homes.

⁶ A. Berube and B. Katz, *Katrina's Window: Confronting Concentrated Poverty Across America* (Washington D.C.: The Brookings Institution, 2005).

Five years after Katrina, Pontchartrain Park suffers from an uneven recovery characterized by blocks of blight among restored homes and limited access to grocery stores and shopping malls. As of June 2009, only 62 percent of the residents in the neighborhood known for its high rate of homeownership had returned (see table #1). Our ethnographic field observations suggest that the slow return and uneven recovery can be linked to the enduring legacy of residential segregation. The first generation of Pontchartrain Park residents were part of a small Black middle class during the 1950s and 1960s that were able to purchase homes, though in an explicitly segregated neighborhood. Because of rampant discrimination, the chance for economic prosperity and upward mobility for the black middle class during the 1950s and 1960s was limited. By 2005, this group was even more vulnerable because of their age. In 1960, shortly after the neighborhood opened, only 2.1 percent of the neighborhood was sixty-five years and older. Before Katrina, thirty percent of the adults in the neighborhood were 65 or older.

In the wake of Hurricane Katrina, the legacy of residential segregation has come with a heavy financial cost for those who applied for assistance from the Louisiana Road Home Program. Through the Road Home program, eligible homeowners qualified for up to 150,000 dollars in compensation. The final award amount was based on the pre-storm value of the house times the percent of damage, less any insurance payments and Federal Emergency Management Agency (FEMA) grants. Majority black neighborhoods like Pontchartrain Park received lower Road Home grant amounts because the agency used pre-storm values to determine grant amounts. A home located in a primarily black neighborhood is generally worth less than one of the same age, with the same living space and yard space, and with the same type of construction but located in a mostly white neighborhood. As a result, residents in majority black neighborhoods like Pontchartrain Park have received less financial assistance to rebuild their homes. By 2008, most of the Road Home grants awarded to Pontchartrain Park homeowners were between \$40,000 and \$65,000, whereas white middle-class neighborhoods like Lakeview received a higher concentration of grants ranging between \$115,000 and \$150,000.⁷ This disparity in grant amounts between Pontchartrain Park, a black middle-class neighborhood, and Lakeview, a white middle-class neighborhood,

⁷ D. Hammer, "Did Road Home Treat All Neighbors Fairly?," *Times Picayune*, May 6, 2008: A1.

shows the financial cost of residential segregation for the black middle class residents in the wake of disaster.⁸ This past August, a federal judge ruled that the Road Home calculations were discriminatory because of the use of pre-storm values to determine grant amounts.

Despite the slow and uneven pace of recovery in Pontchartrain Park, neighborhood residents have formed cross-scale networks with local and extra-local organizations to leverage material and cultural resources to revitalize their community. Data collected from neighborhood meetings show that the neighborhood associations, in particular, serve as vehicles of recovery. Neighborhood associations sponsor events that cultivate a neighborhood identity and solidarity, distribute information about the well being of the community, and provide an opportunity to forge partnership with local community leaders and representatives. Since early 2008, Pontchartrain Park has had two active neighborhood associations. The Pontilly Neighborhood Association, a local nonprofit organization, has been a part of the neighborhood for more than twenty-five years and played a significant role in the neighborhood's revitalization after Hurricane Katrina. Early on in the recovery effort, the Pontilly Neighborhood Association was responsible for planning and hosting several large neighborhood meetings attended by local residents, neighborhood church leaders, the city councilperson and urban planners. The meetings provided a forum for residents to communicate, share information, voice their concerns with the local recovery, and pool share resources to assist one another.

In 2006, actor/activist Wendell Pierce (along with several peers whose parents still reside in the neighborhood) re-established the Pontchartrain Park Improvement Association (PPIA), an organization that had been dormant for over two decades. The PPIA consists of two entities, the neighborhood association and a community development corporation (CDC). In particular, the CDC serves as the planning, business and financial interface between development and planning organizations and the residents of the Pontchartrain Park community. Since the organization's return to the neighborhood, the CDC has acquired lots from New Orleans Re-development Authority (NORA) to build new homes in Pontchartrain Park. On May 14th the PPDC launched the opening of the Design and Sales

⁸ Ibid

Center. The Pontchartrain Park Community Development Corporation has served as the main vehicle in the redevelopment of the neighborhood by purchasing property and redeveloping homes.

Lower Ninth Ward

The 2005 levee failures that flooded the Lower Ninth Ward were catastrophic in nature. While other neighborhoods experienced floodwaters rising gradually over a number of hours, water moved laterally and rapidly as the storm surge poured through Industrial Canal's eastern wall just north of Claiborne Avenue. The combination of high flow velocity and flood depth proved particularly devastating. The force of the water caused some houses to collapse, and pushed others off their foundations. Even areas in Holy Cross, above sea level, were flooded for extended periods of time.⁹ A 2006 study found that nearly 40% of homes in the neighborhood received heavy damage from the flood waters, though structural damage was less widespread.¹⁰ Mortality rates for the Lower Ninth Ward are estimated at 5-7% of the total pre-Katrina population.¹¹ The scale of destruction in the neighborhood attracted extensive media coverage. Images of the severe damage near the main levee breaches, the compelling narratives of survivors, and discussions on the wisdom of rebuilding the community riddled media outlets worldwide.

The return rate in the Lower Ninth Ward is the lowest of all New Orleans' neighborhoods. As of June 2009, only 33% of its residents had returned (see table 1). Like many of New Orleans' neighborhoods, some residents have struggled to navigate the bureaucratic requirements of relief programs like Road Home. These issues are sometimes compounded by the loss of crucial documents in the flood, and in some cases, the lack of formal documents altogether. Around 30% of the homeowners participating in the Road Home program have opted to sell their properties and relocate, the highest of our three study

⁹ B. Maaskant, E. Boyd, M. Levitan S. N. Jonkman, "Loss of Life Caused by the Flooding of New Orleans After Hurricane Katrina: Analysis of the Relationship Between Flood Characteristics and Mortality," *Risk Analysis* 29, no. 5 (2009).

¹⁰ L.K. Bates, and A. Smyth R. Green, "Impediments to Recovery in New Orleans' Upper and Lower Ninth Ward One Year After Hurricane Katrina," *Disasters* 31, no. 4 (2007): 311-335.

¹¹ B. Maaskant et al., 2009.

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neighborhoods (see table 1). Areas north of St. Claude Avenue had a lower return rate (24%) than the higher and slightly more affluent Holy Cross neighborhood (55%). Extensive demolitions north of St. Claude Avenue have cleared hundreds of lots, while other homes remain empty and neglected since the flood.

Like Pontchartrain Park, the scale-crossing networks built by neighborhood associations and non-profits have been integral to the recovery process. Hundreds of non-profit organizations have been active in the neighborhood since 2005. Neighborhood-based groups include A Community Voice (formerly ACORN), Lower Ninth Ward NENA, All Congregations Together, Common Ground, LowerNine.org and the Holy Cross Neighborhood Association (HCNA), to name only a few. University groups, churches, formal non-profits, and others have mobilized thousands of volunteers from across the country to gut and/or renovate damaged homes. HCNA represents one of the only formal neighborhood associations in all of Lower Nine.

The work of the HCNA demonstrates the importance of social networks that not only bond communities together, but networks that cross the boundaries of race, class, and geography. These relationships help connect residents and local groups with funding opportunities and other forms of social capital. Dozens of environmental non-profits and sustainability advocates have partnered with HCNA, most notably Global Green USA and the Make it Right Foundation. The Make it Right Foundation's project in the neighborhood was initiated in 2007, with the actor Brad Pitt as the organization's founder and spokesperson. The most ambitious non-governmental residential housing project in the city, Make it Right hopes to complete 150 new homes and provide preferential financing to former residents. Make it Right's director has specifically cited the work of HCNA and its partner organizations as the local anchor of their project.¹²

Hollygrove

The collapse of the Army Corps of Engineers' levee system during Hurricane Katrina resulted in complete flooding of Hollygrove – by only a few feet in some places and more than 10 feet in other places. The catastrophe effectively ended the previously active

¹² Tom Darden, *Pam's Place*, 2009, <http://www.helpholycross.org/2009/12/pams-place.html#more> (accessed January 9, 2010).

neighborhood organization known as the Hollygrove Improvement Association. With a broken network, very little resources, and little response from external agencies, the residents who were able to return regrouped as the Hollygrove Neighbors Association.

Our field research suggests that the Hollygrove Neighbors Association has had difficulty in attracting the support of a broad variety of external agencies and non-profit foundations to help rebuild their neighborhood. Nevertheless the Association has established connections with other internal neighborhood organizations (including Trinity Christian Community (TCC) and Carrollton-Hollygrove Community Development Corporation (CHCDC)). In addition, the Association has created intra-organizational ties with AmeriCorps, AARP, Habitat for Humanity, Project Homecoming, New Orleans Food and Farm Network (NOFFN), Tulane University, and the University of New Orleans to effectively address neighborhood recovery.¹³ TCC, a faith based organization, has been active in the neighborhood since 1967 and was important in bringing AmeriCorps, Habitat for Humanity, Project Homecoming, and individual volunteers to the neighborhood to help with gutting and rebuilding damaged homes.

Our ethnographic observations also indicate that the creation of new linkages with several local and extra local organizations has proved beneficial to the Hollygrove neighborhood. Collaboration of TCC, AmeriCorps, and neighborhood residents resulted in the rebuilding of nearly 2500 homes. TCC Director Kevin Brown earned a national public service award (the top public service award from the Department of Justice) for his "outstanding service to rebuild New Orleans in general and Hollygrove in particular."¹⁴ Organizational collaborations also created Hollygrove Market and Farm (HM&F), a micro urban farm that has become not only a local economic vehicle but also an education and demonstration center for sustainable farm practices in disaster recovery.

Neighborhood revitalization is taking place with active involvement of residents and effective collaboration of internal

¹³ R. Hawkins and K. Maurer, "Bonding, Bridging, and Linking: How Social Capital Operated in New Orleans following Hurricane Katrina," *The British Journal of Social Work* 40 (2010): 1777-1793.

¹⁴ Daniel Hoffman, *List of Honorees*, October 27, 2010, <http://www.mainjustice.com/2010/10/27/listofhonorees/> (accessed January 14, 2011).

and external organizations. Significant ongoing projects include the AARP Hollygrove Livable Community Project and the Tulane Hollygrove Greenline Project. The Livable Community Project promotes safe growth and aims to help places build their own capacities, such as building a community garden, forming a neighborhood watch association, or establishing a walking club. The project ensures that residents are the principal stakeholders and empowers residents to work together on projects that benefit their neighborhood. AARP is also working with residents to create crime watch teams and crime awareness programs. Tulane's Greenline Project complements AARP's project through planning efforts, use of student volunteers, and grassroots organizing to improve Hollygrove's physical landscape.¹⁵

Carrollton-Hollygrove CDC and HGN are two formal neighborhood organizations actively involved with residents in rebuilding their neighborhood. Carrollton-Hollygrove CDC, like other CDCs, is involved in developing affordable housing for low- and moderate-income households, and promotes neighborhood revitalization and recovery. HGN is involved in community organizing, information sharing among residents and various community organizations, and developing opportunities for residents to connect with each other around recovery and rebuilding issues. Hollygrove is one of the poorer neighborhoods in the city and received less publicity after Hurricane Katrina. Nevertheless, its population return rate is greater than the Lower Ninth Ward and Pontchartrain Park return rates. Table 1 shows a 73 percent return rate for Hollygrove – the highest of the three urban neighborhoods we have studied. Our research suggests that one reason for this high return rate is the intensity of neighborhood activism and collaborative efforts by community organizations. Neighborhood organizations and associations are vehicles for distributing resources, creating links with local and extra-local institutions, and forging collective identity.

Conclusion

Post-Katrina New Orleans confronts us as a city of irony, paradox, and contradiction. On the one hand, New Orleans is one of the most "place-intensive" cities in the United States given

¹⁵ AARP Livable Communities Project <http://www.aarp.org/home-garden/livable-communities/> (accessed January 14, 2011); Hollygrove Greenline Project <http://www.tulanecitycenter.org/programs/projects/greenline> (accessed January 14, 2011).

region's rich cultural heritage, deep family and ethnic connections, longstanding and well-organized neighborhood coalitions, and diversity of ties with extra-local organizations (historic preservation societies, nonprofit organizations, and so on). On the other hand, the city and region have experienced major long-term social problems and challenges in the form of deindustrialization, persistent racial animosity and conflict, weak and corrupt local governments, and eroding economic fortunes due to the decline of the oil and port industries and the increased reliance on low-wage tourism jobs. At the same time, local residents and neighborhoods have become aware of the problems of the post-disaster policies and are working to develop new networks and institutions to promote resilience to present-day hazards and buffer against future risks, such as those associated with coastal erosion and climate change. As New Orleans continues to rebuild post-Katrina developmental patterns will feed forward to affect the future resilience and vulnerability of different urban neighborhoods and the larger metropolitan area.

Our research also suggests that rates of post-disaster recovery derive from the formulation and implementation of public policies. Social policies such as the Road Home program have constrained and limited the pace and trajectory of post-disturbance resilience by reinforcing and perpetuating segregationist housing patterns and socio-spatial inequalities. At the same time, public policies and private actions have the potential to undo past forms of inequality and encourage the development of resilient neighborhoods. In addition, government actions, socio-legal regulations, and policy interventions can modify exposure to hazards through land-use changes. The important point is that resilience is not a static property or feature that happens by accident; nor is resilience an inherent "property" of an urban ecosystem. Rather, social policies play a major determinant role in generating the capacity of social-ecological systems to cope with, adapt to, and shape change. Policies pertaining to urban and suburban development, poverty and homelessness, irrigation and water resources control, ecosystem management, and so on are crucial to determining the resilience and vulnerability of cities and regions. The challenge for New Orleans and other metropolitan regions is to develop and implement policies to enhance resilience to deal with disaster and to build preparedness for living with uncertainty and surprise.

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Direct all correspondence to Kevin Fox Gotham, Department of Sociology, 220 Newcomb Hall, Tulane University, New Orleans, LA 70118. Phone: 504-862-3004. Email: kgotham@tulane.edu.

Sarah R. Lowe and Jean E. Rhodes

Natural Mentors in the Lives of Hurricane Katrina Survivors

Sarah R. Lowe and Jean E. Rhodes, *University of Massachusetts Boston, Department of Psychology*

Introduction

Hurricane Katrina was the worst natural disaster in recent United States history, leading to nearly 2,000 deaths and the displacement of over 650,000 people¹. The hurricane was associated with elevated levels of psychological distress among survivors², with low-income communities, African Americans and single mothers at particularly high risk³. In this study, we focused on the protective role of natural mentors in a sample of primarily African American single mothers who survived the storm.

Background

Low-income, single African American parents are particularly vulnerable to post-disaster difficulties⁴. Even before Hurricane

¹ Richard D. Knabb, Jamie R. Rhone, and Daniel P. Brown. Tropical Cyclone Report: Hurricane Katrina (2006). National Hurricane Center. Retrieved from: http://nhc.noaa.gov/pdf/TCR-AL122005_Katrina.pdf; U.S. Department of Commerce (2006). *Gulf Coast Recovery: 17 Months After the Hurricanes*. Washington, DC: Economics and Statistics Administration. Retrieved from: www.economics.noaa.gov/library/documents/economics_for_coastal_mine_management/gulf-coast-recovery-esa.doc

² Sandro Galea et al., "Exposure to Hurricane-Related Stressors and Mental Illness after Hurricane Katrina," *Archives of General Psychiatry* 64 (2007): 1427-1434; Ronald C. Kessler et al., "Mental Illness and Suicidal Behavior after Hurricane Katrina," *Bulletin of the World Health Organization* 84 (2006): 930-939; Richard H. Weisler, James G. Barbee, and Mark H. Townsend, "Mental Health and Recovery in the Gulf Coast After Hurricane Katrina and Rita," *Journal of the American Medical Association* 296 (2006): 585-588.

³ Chris R. Brewin, Bernice Andrews, and John D. Valentine, "Meta-Analysis of Risk Factors for Posttraumatic Stress Disorder in Trauma-Exposed Adults," *Journal of Consulting & Clinical Psychology* 68 (2000): 748-766; Galea et al. 2007; Betty Hearn Morrow, "Stretching the Bonds: The Families of Andrew," in *Hurricane Andrew: Ethnicity, Gender, and the Sociology of Disasters*, ed. Walter Gillis Peacock, Betty Hearn Morrow, and Hugh Gladwin, 141-170 (New York: Routledge, 1997).

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