

Bonding, Bridging and Linking: How Social Capital Operated in New Orleans following Hurricane Katrina

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Abstract

In the past decade, social capital has been explored internationally in the disaster and social work literature, particularly in terms of historical oppression and limited economic resources of disadvantaged communities. Social capital in the United States, however, has had less integration. Using a qualitative grounded theory approach, we examine the different types of social capital (bonding, bridging, and linking) through a social work lens. We examine how social capital operated in the lives of 40 families following Hurricane Katrina in New Orleans, Louisiana. We attempt to understand how residents utilized their social capital to survive the storm, relocate, and rebuild their lives and communities. Results indicate residents, especially those with low incomes, relied on, built upon, and collapsed all levels of social capital for individual, family, and community survival. Participants described a process through which close ties (bonding) were important for immediate support, but bridging and linking social capital offered pathways to longer term survival and wider neighborhood and community revitalization. This paper also discusses how social capital inclusion in social work can strengthen or hinder individual and community development following a catastrophic event.

Keywords: Social capital, Hurricane Katrina, disasters

Introduction

Much has been written regarding the social conditions that contributed to the magnitude of the devastation of Hurricane Katrina in the US Gulf

Coast in August 2005. In the literature, Hurricane Katrina is often categorised as a non-natural disaster—one in which social factors contributed to increased vulnerability and inhibited recovery due to lack of socio-political and economic resources (Cutter *et al.*, 2003; Brinkley, 2006; Hartman and Squires, 2006; Park and Miller, 2006). The social and physical destruction of New Orleans further intensified the impact of the disaster for the most economically vulnerable (Brinkley, 2006; Hartman and Squires, 2006; Park and Miller, 2006; Iversen and Armstrong, 2008; Moyo and Moldovan, 2008).

While social capital has been studied in the context of disasters (i.e. the 2004 Indian Ocean Tsunami, regional flooding in Canada and the UK), Hurricane Katrina provides an opportunity to analyse the impact of a disaster on a vulnerable community in the USA from a social work perspective (Cutter *et al.*, 2003; Yanay and Benjamin, 2005; Beaudouin, 2007; Moyo and Moldovan, 2008; Rowlands and Tan, 2008). The significance of the social conditions calls for a better understanding of how vulnerable populations used the resources available to them to survive the devastation and disruption of Hurricane Katrina and to rebuild lives, communities and a city.

In this paper, we examine families following Hurricane Katrina through a social capital lens. Using a qualitative grounded theory approach, we look at the different types of social capital present in New Orleans (bonding, bridging and linking) juxtaposed against the experiences of racially and economically diverse families. In this manner, we attempt to understand how residents utilised their social capital to survive the storm, relocate and rebuild. Our goal for this examination is to increase social workers' understanding of the nature of social capital and how it can strengthen or hinder individual and community development following a catastrophic event.

Background

Social capital has gained intellectual currency as a means to understand the relative strength of families and communities. The concept has been applied in disciplines ranging from sociology to economics, psychology and public health (Lin, 2001; Pooley *et al.*, 2004; Roberts, 2004). In the USA, Coleman's (1988, 1990) conceptualisation of social capital as co-operative relationships within families and communities and Putnam's (2000) work on civic engagement, trust and norms of reciprocity have dominated discussion. In our examination of social capital, Coleman's conceptualisation has the most utility for social workers. Coleman explains social capital as direct and indirect resources that are a by-product of social networks and social support systems amongst family, friends or community members.

In the past decade, social capital has been explored in the disaster research literature, particularly in terms of historical oppression and

limited economic resources of disadvantaged communities such as those affected by Hurricane Katrina in the USA and the 2004 Indian Ocean Tsunami (Barnshaw and Trainor, 2007; Mathbor, 2007; Iversen and Armstrong, 2008; Norris *et al.*, 2008). Though there has been sparse use of the concept in social work literature in the USA, many agree that social work education, research and practice would benefit from the inclusion of the multidimensional framework of social capital to enhance the understanding of social relationships (Loeffler *et al.*, 2004; Mathbor, 2007; Ersing and Loeffler, 2008).

There are many examples of the incorporation of social capital in social policy. In Western Europe, Australia and New Zealand, investment in and promotion of social capital within communities has been strongly linked to political agendas, influenced by Giddens' (2001) 'third way' (Schuller *et al.*, 2000; Farrell, 2007). In the UK, social capital policies have addressed social deprivation and exclusion from a community development perspective (Leonard, 2004; Farrell, 2007; Pople, 2006). Further, the concept has been promoted as essential for sustainability and poverty reduction in international policy (World Bank, 2009).

The concept has been little applied to eradicating social inequality beyond isolated local programmes in the USA (DeFilippis, 2001). The approach to social capital in the USA reinforces a dynamic in which structural barriers of race, class and gender are reduced to individual characteristics rather than impediments that whole groups and communities experience (DeFilippis, 2001; Hero, 2003). As research has shown in race/ethnicity and socially deprived segregated communities such as West Belfast, Northern Ireland (Leonard, 2004), social capital can be a useful concept to understand the different values of network relationships for specific communities in a socio-political context (Lynn, 2006; Farrell, 2007).

Further debate exists over whether social capital is an individual or solely a community concept (Kawachi, 1999; Lochner *et al.*, 1999; Carpiano, 2005) or a function of both (Coleman, 1990; Portes, 1998, 2000). It is our position that it is in the focus on the actions of individuals in relation to structural forces (their community) that the framework of social capital finds its greatest usefulness in social work. We concur with Schuller *et al.* (2000) that the concept is unique in its ability to bridge the theoretical gap between individual and community that spans from the micro to the macro in an interactive and independent manner more effectively than many previous socio-economic/-political theories.

Researchers have made further distinctions about the quality and kinds of social capital that exist. Gitell and Vidal (1998) and Szreter and Woolcock (2004) differentiate three types of social capital: bonding, bridging and linking. *Bonding* social capital refers to relationships amongst members of a network who are similar in some form (Putnam, 2000). *Bridging* social capital refers to relationships amongst people who are dissimilar in a demonstrable fashion, such as age, socio-economic status, race/ethnicity and

education (Szreter and Woolcock, 2004). *Linking social capital* is the extent to which individuals build relationships with institutions and individuals who have relative power over them (e.g. to provide access to services, jobs or resources) (Woolcock, 2001; Szreter and Woolcock, 2004).

Lin (2001) further delineates interactions as heterophilous (amongst actors who are dissimilar) or homophilous (amongst actors who are similar). Typically, homophilous bonding represents the strongest connection with the least valuable by-product. Heterophilous bridging social capital is generated from a weaker connection but produces a more valuable by-product than bonding interactions (Lin, 2001; McPherson *et al.*, 2001). Linking social capital is the result of the weakest relationship but the most valuable outcome, as linking provides access and connection to power structures and institutions. Unlike bonding, it is bridging and linking that are characterised by exposure to and development of new ideas, values and perspectives (Woolcock, 2001; Szreter and Woolcock, 2004).

Another important debate in the literature disputes whether social capital is a wholly positive asset, positing that there are negative elements that should also be characterised as social 'capital' (Putnam, 2000; Hero, 2003). Earlier studies found that social capital resulting from support of a social network can be important to surviving personal, emotional and economic hardships (Edin and Lein, 1997; Bassuk *et al.*, 2002; Hawkins and Abrams, 2007). Others found negative and counter productive sides to social capital; it can be time-consuming, hurtful to mental health function or impede acquiring or retaining employment (Caughy *et al.*, 2003; Beaudouin, 2007).

Homogeneous communities exhibit more bonding social capital but less bridging and linking social capital at societal and institutional levels (Lin, 2001; Costa and Kahn, 2003). In the responses to Hurricane Katrina, this tension is well documented (Dyson, 2006; Bullard and Wright, 2007). Numerous media reports and research studies detailed examples of homophilous bonding social capital in which individuals helped their neighbours and community during and following the storm (Hartman and Squires, 2006; Rodriguez *et al.*, 2006; Beaudouin, 2007). These reactions are common in the disaster literature worldwide. Dynes (2006) reported data on disasters showing that social relationships positively impact survival rates. In a 1980 Italian earthquake, for example, individuals living alone were 2.4 times more likely to die waiting for outside rescuers than those who lived with at least one other person.

Conversely, the breakdown of heterophilous disaster response, especially at the national level, is also well documented (Brinkley, 2006; Dyson, 2006; Dynes, 2006; Bullard and Wright, 2007). Examples include a lack of pre-hurricane disaster preparedness, no Red Cross-sanctioned shelters within New Orleans, no drivers for evacuation buses and neglected levees, all of which contributed to the magnitude of the disaster (Brinkley, 2006).

The challenge of building heterophilous bridging and linking social capital is amplified when the homophilous community is economically and racially segregated (Leonard, 2004; Beaudouin, 2007; Mathbor, 2007). Prior to Hurricane Katrina, the population of urban New Orleans was 68 per cent African American, with a poverty rate almost twice the national average, at 23 per cent (US Census Bureau, 2006). As we have seen internationally, communities that are historically socially and economically vulnerable are at greater risk of damage from weather-generated disasters and slow recovery efforts due to the lack of financial capital and political power (Hawkins, in press; Dynes, 2006; Brinkley, 2006; Park and Miller, 2006; Mathbor, 2007; Rowlands and Tan, 2008).

Current study

In this paper, we examine the different types of social capital available following Hurricane Katrina by looking at the assistance that New Orleans residents either received or provided. We explore how residents from different economic and racial backgrounds made use of the social capital available to them. We further examine the bonding, bridging and linking social capital that existed prior to and was made available during Hurricane Katrina, as well as that which was transported in the evacuation. We see how social capital benefited and hindered planning, evacuation, as well as returning and rebuilding in New Orleans.

Methods

This is a qualitative, longitudinal, grounded theory study using ethnographic elements (Creswell, 1994; Tubbs *et al.*, 2005; Charmaz, 2006). Following Padgett (2008), we use a life-course perspective with a grounded theory approach, which included semi-structured interviews followed by more directed interviews. The grounded theory approach that we use is suggested by Charmaz (2006), following 'systemic, yet flexible guidelines' (Charmaz, 2006, p. 2) that began with data collection and analysis at the start of the interviews. This method allowed us to develop theory as data are collected through interviews and interactions with study participants, following up on important patterns and themes as additional data emerged.

Sampling and recruitment

Participants for the study were identified from notices posted on databases and websites made available on the internet through the US Federal

Management Emergency Administration (FEMA) and American Red Cross. Others were identified through a 'snowball' method; still others were approached on the streets and in high-trafficked shopping areas within and near New Orleans. Participants included heads of household ($n = 40$) in families with school-age children. All families had been affected by Hurricane Katrina, gave informed consent and received \$40 (30 €) for the original interview and \$30 (22 €) for the follow-up. All study protocols were approved by the authors' university-based Protection of Human Subjects Review Committee. Interviews were conducted over twenty-six months, from July 2006 through September 2008.

The demographic breakdown of the heads of household interviewed included 76 per cent African American, 18 per cent white and 2 per cent other. The age range was eighteen to sixty-three ($m = 41$). Thirty-four of the participants were female, and six male. The number of children ranged from one to five. Nineteen participants identified as low-income, ten as working-class, eight as middle-class and one as upper-middle-class. Three of the middle and the upper-class participants reported growing up poor.

Procedures

The study included two life history interviews leading up to experiences with and following Hurricane Katrina. The interviews were approximately six months apart and lasted two hours. Each interview was conducted at a setting chosen by the participant. In addition to using traditional grounded theory methodology (Creswell, 1994; Padgett, 2008; Charmaz, 2006), interviewers used ethnographic techniques, serving as participant observers and volunteering with clean-up efforts in New Orleans between interviews. Interviewers also spent time with participants at community events, in workplaces or places of worship (Hammersley and Atkinson, 2007). Interviews were conducted by the study PI, a professional masters-level social worker, and three trained graduate-level qualitative interviewers.

The second interview was individually tailored for each respondent (Padgett *et al.*, 2006; Padgett, 2007). It was designed to discern changes since the last interview, fill in gaps, verify events, clarification and to follow-up in detail on experiences related to Hurricane Katrina. Using the field methods and debriefing model suggested by Hammersley and Atkinson (2007), Hill *et al.* (1997) and Padgett (2008), interviews were tape recorded and transcribed verbatim. Field notes were also compared and analysed. Researchers participated in written and oral debriefings following each interview, and used multiple sources to triangulate collected data, including media resources and member checks (Lincoln and Guba, 1985).

Using Nvivo software, multiple coders read transcripts and developed a systematic data coding scheme. Separately, each analysed the transcripts

for preliminary themes (open coding) and developed a list of categories and concepts (Strauss and Corbin, 1998). We arrived at consensus on a list of codes and then developed primary and secondary codes. Further themes and patterns were identified through selective coding.

Limitations of this study

This study is limited by our snowball sampling method and the small size of our sample. Findings cannot be generalised to the larger New Orleans population. The intention of a qualitative grounded theory study, however, is to raise new questions and generate theories, not to produce a representative sample (Strauss and Corbin, 1998). Further, while participants did discuss their lives before and following the hurricane, some important details may have been omitted or overlooked by interviewers or study participants. Also, when these experiences occurred, participants might have been under heavy stress, such that their memories may be fallible or perceptions skewed. Whilst these are concerns, the importance of these findings lies in the sense that participants make of their experiences rather than factual representation of events.

Results

The patterns revealed in this study illustrate that, as is common in disaster situations, nearly all participants benefited from some kind of homophilous bonding social capital that either helped them to safety or they assisted others within their network. The results demonstrate that heterophilous bridging social capital played an important role as well. People gave and received assistance across racial and socio-economic lines. There were examples of linking social capital in which those in power not only helped, but used their connections and relative advantage to assist, sometimes in unexpected ways.

The results reported below are direct quotes in study participants' own words. The language is reflective of and distinctive to the New Orleans region, a mixture of French-speaking Canadian, some West African languages, and a US Southern plantation vernacular. The dialect can be so distinct that Whites and African Americans speak it differently. While we did not capture that dialect, we have attempted to retain the fluid nature of the speech.

Bonding social capital

As is usual in a crisis, most residents first received from or gave help to their immediate or proximal networks. In a common example of bonding social

capital, families met to strategise and develop a plan of action prior to the arrival of the hurricane. As part of this planning process, there was an exchange of physical, emotional and financial support across homophilous network links that facilitated how families managed throughout the storm.

Rosland, an African American woman in her mid-thirties, discussed how her family planned for and managed their evacuation:

Me and my little sister, . . . and her husband, sittin' up there talkin'. It's goin' on one o'clock in the morning. And we still in amazement like, 'what we gonna do'? I said, 'I don't know what ya'll doin, but me and my kids, ready to go'. They was leavin' New Orleans, five o'clock Sunday morning. And it was like my whole family . . . we had eight carloads of us and we was gonna stick together . . . one stop, we all stop.

Some participants gave examples of bonding social capital prior to Hurricane Katrina. Margaret, a grandmother and mother of a teenager, described the social capital exchanges from her social network and how losing part of that network affected her:

My sister was always with me. She drove. I didn't drive. She drove me to the store, movies. Play bingo. Went to the doctor together . . . Always looked after me and my children . . . I was the one watch after our mama. You know, cook, clean . . . she lived with me . . . Lived with me and (my children and grandchildren) all live together. My sister stay at her own place . . . My son, he stay up North . . . I hardy did anything without (my sister) . . . She in Houston now. Mama in Houston . . . Now I just take the bus . . . bus hardly run . . . bum rides to the store, church. Things different now. Hard to help people when you can't help yourself.

The bonding relationship influenced whether or not families left New Orleans prior to Katrina and what they did after they returned. Janice's family, who lives across the river from New Orleans, did not want to separate. Unlike Rosland, Janice's entire family, including her ex-husband, weathered the storm together:

What happened was my mother. My mother refused to leave. I wasn't leaving my mom and dad behind. And my sister, her husband, my niece, my nephew all came over and there was no way I was leaving them . . . We went to . . . the pool hall right next door . . . It's real secure. She's got the glass that you can't just break. It's real protected. More protected than being in the house . . . We slept on the pool tables. We didn't really sleep you know. The only one who slept was my godchild. The rest of us were just up and watching it.

Following the storm, nine members of Janice's family lived in the safety of the pool hall for several days. They shared resources and helped within the community, which also watched over them. Several study participants stayed behind in the storm, helping to rescue stranded individuals or providing supplies until the authorities came, exemplifying bonding social capital at the neighbourhood level. Ken, a father of two, helped families in his community:

But um, Monday, I'd say 4, 5 o'clock around that time, I got in a boat We can sit on top of a building and see people up on a church steeple, people climbing on a roof. Well I wanna see I can get these people down They had people with life jackets going down a highway. We pick them up and we bring them to some high school. They have on life jackets floating down a highway. They had this one couple, I'm saying a couple it was a female and another guy, maybe 50 yards away from her . . . I'm thinking Monday night, we got about 14–15 people. I'm estimating about seven in a boat We got about 14–15 people.

Cindy, a thirty-two-year-old mother with four children, also started to help people immediately. Trapped on top of their flooding apartment building, she and her thirteen-year-old son swam to safety, she with her youngest daughter on her back and he carrying the two middle children. Being the only two in the family who could swim, they rescued Cindy's grandfather, aunt, uncle and cousin. Once their family was safe, she and her son found a boat and rescued others, including a house-bound neighbour.

Cindy is a low-income African American woman who lived in an area of New Orleans known as the Ninth Ward, one of the poorest neighbourhoods in the city. Ken is a middle-income white man who lived in Saint Bernard Parish, a suburban community southeast of New Orleans. Yet, they both commented on the importance of neighbourhood and the social connections within them. 'This is where your family is; this is what you know People, they part of the community too They want the same things you want,' Ken said. Cindy described it this way: 'I want them to help *me* if I need helpin', least ways I hope somebody will But these your people. Even when you don't know them from John. They still your people.'

Bridging and linking across the social gap

In addition to the bonding social capital in the form of helping those close to them, participants described a system of bridging and linking social capital exchanges in which people provided and shared information, resources, supplies and food. In many cases, bridging and linking social capital began to overlap as the socio-economic strata became blurred in the heart of the aftermath of the floods; the distinctions were no longer as socially important as in everyday life.

Yet, some African American study participants reported that socio-economic status and race remained significant barriers. Martha, a middle-class African American mother of two, described how she used her socio-economic status and education to gain access to information, exemplifying heterogeneous linking social capital, by interacting with networks beyond her own:

We in the Astro Dome (in Houston, Texas), just standing around and nobody knew what to do. I saw these white ladies talking It seemed

that white people knew more than black people. They seemed to know what to do So I went over and started asking questions. First they looked at me like I don't know what, but when they saw that I was articulate, they started answering my questions Found out where to go to get clothes, food. I didn't even know about the money Red Cross was giving out That's how we found our apartment . . . I went back and told the black ladies . . . I don't know how they knew (what was going on) and nobody was telling us, but I was going to find out and let my people know too.

Martha used her initiative to find resources and spread that information to others; some participants described receiving temporary or long-term assistance from locals or strangers. Donna is disabled, with four children. Because of her disability, she and her family were mistakenly sent to a rehabilitation shelter following the evacuation. 'I didn't need to be there. It was all men anyways and me!' Entitled to government subsidised housing, Donna sought an apartment in Houston, Texas. A stranger came to her rescue. Though, with all the stress she felt, Donna nearly rebuffed the offer of help, which came from outside of her homophilous network:

I hear this voice, this young lady, 'Ma'am,' she said, 'could you wait a minute?' I turn around I said, 'ma'am, do me a favor, you don't know me or what I've been through, please back up off of me.' 'Ma'am wait a minute.' I said, 'Ma'am, there's no minutes left.' The third time, she said 'Please, listen to me.' And there was only God made me turn around I said what is it, she said 'would you do me a favor, come to my apartment. Let me show you something.' . . . I went to her apartment. She was a twenty-eight-year old young female, she takes us up, we goes in. She just started out. She had one air mattress in there, nothing else. She said, 'You guys can stay here.' Clean as whatever; you can eat off of her floor but that one air mattress was in there. I said, 'You kidding me?' She said, 'No, you guys can stay here with me.' She said 'I'll get my friends to bring you where you need to go to try and help you.' So I accepted that offer.

Hurricane survivors spoke of the access to resources and support that came from local and national organisations following the disaster. Several participants still worked in or received necessary help from groups created in the aftermath of the disaster. Rebecca, a resident of Gentilly, a New Orleans neighbourhood, and single mother is active in the Gentilly Civic Improvement Association (GCIA), formed even before residents returned to New Orleans following their evacuation. Unlike most New Orleans neighbourhoods, Gentilly encompasses multiple communities from a range of socio-economic backgrounds. Rebecca and several other GCIA members were especially critical of the lack of government aid to their communities and became motivated to rebuild their own community. 'We were all going to do something to help our neighborhoods because no one else was,' she said. She and her neighbours built a coalition amongst various racial and economic groups. Summing up the bridging social capital effort, another Gentilly resident, Vanessa, said 'We are the real rainbow coalition: different races, different classes, people of faith with nonbelievers. People who

would be friendly, but who wouldn't necessarily work together on a regular day'. Rebecca concluded, 'If I knew how to fix a traffic light I would have done that too. It is amazing how much you can get done when you think nobody cares'.

Linking social capital and community help

The GCIA was only one of a number of groups that started as a neighbourhood coalition and expanded beyond its homophilous network to generate linking social capital connections to other communities and to organisations outside of New Orleans. Most help started at the grass-roots level with subsequent linking to more distant networks. While days and weeks after the storm, city, state and federal resources failed them, participants saw an increase in resources from local groups and the American Red Cross, both during displacement and upon their return to New Orleans. The GCIA worked with the Louisiana Recovery Authority, a government agency formed following Hurricanes Katrina and Rita, Tulane University professors and local politicians to develop a needs assessment and rebuilding plan.

Study participants reported positively on the efforts of the local New Orleans group Common Ground Collective consistently throughout the interviews. Common Ground is a community agency that provided resources including food banks, mental health counselling and health care to legal services, serving as a focal point for volunteers and those in need of services.

Andrea, a mother of three children, helps out at a domestic violence shelter started by Common Ground in an effort to give back to the agency that helped her:

Let me tell you. If not for Common Ground... I don't know. You come down here. What you need? You get food, clothes... I got vitamins. You need to use the computer, got internet? Doctors. Medicine. There is this girl in there, did not get her check, she talk to a lawyer what come by. This is the big help.... And donations everywhere! Everybody saw us on T.V., everybody saw everything gone.... This is how I help now. I ain't guttin' houses, but I do what I can do to help.

While bonding, bridging and linking social capital were useful in providing help to the victims of Hurricane Katrina, not all participants fared well. At the bonding level especially, some participants were influenced by friends and relatives to stay, despite having resources and the ability to flee. Even bridging and linking social capital had drawbacks, especially for lower-income participants. Negative stereotypes affected how and whether participants received services. Larry, a twenty-seven-year-old African American father of two, received help from friends, but getting institutional aid was difficult in Memphis, Tennessee:

I went into the office to get support for my kids and they treat me like I was a criminal... I didn't look as bad as other people. I tried to keep myself up,

but Red Cross said I won't from New Orleans Where I'm from then? . . . I was harassed by the police, called a pimp, a drug dealer. I was arrested and I never done anything bad in my life . . . I'm still tryin' to clear that up . . . I wish I'd never walked in that room They treat me pretty bad

Toni, a young African American mother, said she saw changes in people's attitudes about her. She described changes in people who had the power to hire her:

They was good at first, then they started saying stuff to you in store and watching you or your child like they gonna steal something . . . because when I first got here, I went and applied for jobs. You know what the number one question that people ask you out here? Once you say you're from New Orleans or you show your ID, that's the end of that You never get a phone call. Once they know that you are from New Orleans, they scared to hire you.

Both Larry and Toni describe a breakdown in bridging and linking capital that can occur when racial stereotypes become a factor in social capital (Hero, 2003; Putnam, 2000). Despite these negative experiences, the study results show that at some point in the process, nearly all study participants benefited from different levels of social capital. Bonding, bridging or linking social capital were generated within and between social networks and included individuals, outsiders, agencies or institutions. These examples of social capital that existed pre-Katrina and developed post-Katrina were largely positive for members of this study, although, as in Larry and Toni's cases, there were also negative experiences.

Discussion

The aftermath of Hurricane Katrina provides a unique opportunity to more closely examine how social capital operates within a disaster experience—a situation in which it could be its most useful. This examination is especially relevant when trauma is mixed with poverty and social exclusion. The present study is grounded in the assumption that social capital exists in people's lives, and that the important questions are what kind(s) of social capital exists and how do people use it? We found instances in which bonding, bridging and linking social capital were instrumental in aiding participants to prepare for, endure and mutually aid one another before and during the storm, in addition to recovery following the floods.

The different conceptual types of social capital overlapped at times, but we found that bonding social capital was especially relevant in day-to-day activities and for logistical help during and following the storm and floods. The usefulness of bonding social capital was especially true for the lower-income study participants. We saw the strength of bonding social capital in facilitating the pooling of resources to survive the storm,

both mentally and physically. Bonding social capital plays an important psychological role in the development of resiliency as well, also seen in our results (Luthans *et al.*, 2006).

Bridging social capital, too, was instrumental in helping people survive the immediate aftermath of the flood. Connections across geographical, social, cultural and economic lines provided access to essential resources for families. This type of bridging social capital is common and indispensable following disasters, both natural and manmade. In addition to aid and support proffered within New Orleans, as evacuees left the city, some for the first time ever, they were introduced to new ideas, people and ways of life. This crossing of economic and social lines was especially important for lower-income residents.

What is essential for social workers in this examination, however, is not just the existence of social capital, but how it operated in individual lives and communities. We see bonding, bridging and linking not as compartmentalised experiences, but as experiences that rely on, build upon and interact with each other. The interaction of bonding, bridging and linking social capital resources played and continues to play a significant role in the reconstruction of New Orleans. It is clear from this and other studies (Caughy *et al.*, 2003; Hawkins and Abrams, 2007; Leonard, 2004; Norris *et al.*, 2008; Rowlands and Tan, 2008) that while bonding social capital provides one layer of connection and security, it alone may not sustain well-being in difficult times. Bonding helped some of those families left behind to survive or plan for survival, but lack of community resources before and after the hurricane left many residents hopeless and struggling to maintain their lives (Beaudouin, 2007; Moyo and Moldovan, 2008; Hawkins, in press). Combining bridging and linking with bonding social capital offers the best economic chances.

We see also in this study that residents display a connection to New Orleans that transcends mere geography and represents a peace of mind that is centred within the people and communities. In earlier work, we describe this sense of safety as ontological security (Hawkins and Maurer, in press). Social capital helps to maintain this security and operates within a social-psychological manner consistent with the context of disaster research (Barnshaw and Trainor, 2007; Norris *et al.*, 2008).

Implications and conclusion

This study has wide-ranging implications for social work from clinical, community and policy perspectives. Social work can provide the foundation to help clients connect to and use their positive social capital as a survival mechanism, as a strength builder and as a resource for rebuilding. Further, social workers can help communities identify natural sources of

positive social capital as well as sources from the outside. These connections, if used to their maximum benefit, could help individuals, families and communities to survive difficult times and move forwards to establish new communities and connections. Several authors argue that the person-in-environment or ecological perspective commonly used in social work would benefit greatly from increased focus on not just the individual actor, but also the actor in the community, and the community, as understood through the concept of social capital (Author's own; Loeffler *et al.*, 2004; Lynn, 2006; Mathbor, 2007).

One challenge for social workers is how to maximise social capital, while distinguishing positive from negative or counter productive social capital. Social work practitioners and researchers need to further explore definitions and operationalisation of social capital to better understand how it affects individuals and communities as a whole. Disaster response training, research and practice commonly focus on individual mental health (trauma) and psycho-social interventions, rather than community development, to reduce vulnerabilities arising from social inequalities that often exacerbate the impact of a disaster (Pyles, 2007; Moyo and Moldovan, 2008). Social work's ecological approach that includes macro to micro-level practice is ideally suited to interventions that address the power dynamics of the complex bonding, bridging and linking of networks to recover and rebuild post-disaster (Yanay and Benjamin, 2005; Mathbor, 2007; Pyles, 2007; Rowlands and Tan, 2008).

Social workers in the USA stand to gain much from the experiences and research on the inclusion of social capital in community development in places such as Western Europe, East Asia and Australia. Social workers internationally can also benefit from the consistent and clear use of social capital in these sustainability models. These lessons can be useful in response to disasters, but perhaps more importantly, to address the inequities of social exclusion by race/ethnicity and SES that are at the heart of the social work mission and at the heart of social disasters, such as that wrought by Hurricane Katrina.

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