# A tale of resilience in two flooded cities: Dhaka 1998 and Brisbane 2011

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Introduction

A disaster is a stark opportunity for a ‘social audit’ of a city. It is where the extent to which an equitable allocation of social and economic resources is laid bare and the relative efficacy of its institutions can be compared with informal sources of support such as neighbourhoods, families and other networks. In this paper, I take the same category of disaster, a flood, and examine the experience of two vastly different cities, Dhaka in Bangladesh and Brisbane in Australia. The reason for this unlikely comparison is to make some observations and draw some conclusions about the efficacy of the concept of ‘community resilience’ in the urban environment.

The concept of community resilience to disasters has been taken up in the social sciences in recent years from its origins in environmental and disaster literature. Community resilience broadly describes the necessary qualities required of a community for it to withstand and recover from, or adapt, following a disaster. While ‘resilience’ is carefully defined in the literature, there has been less critical attention paid to the more contested idea of ‘community’ in this context. Much of the literature takes as its focus community of propinquity, or the ‘local community’, as a necessary source of social and material support in a disaster without comparable attention to the wider structural conditions that mediate or necessitate local networks. A local approach can be effective when small rural or coastal settlements are considered. These have relatively small and often well-integrated institutional and social environments. A focus on local community in a large city however is far more complex and while place is important in cities, it needs to be understood in the context of the interconnected social complexity of cities, including institutions, inequalities and networks across time and space.

In this paper, I will use case studies of disasters in these two very different urban contexts to investigate the relative importance of institutional and local forms of support in a disaster and the ways in which each of these places might be vulnerable or resilient as a result. The first case study is Brisbane, Australia, which in early 2011 experienced widespread flooding to about twenty percent of its suburbs. The second case study is Dhaka, Bangladesh, which experiences regular severe flooding and loss of life and is considered one of the most at-risk cities in the world from climate change. The particularly severe floods of 1998 will be used as the principle case study in Dhaka. Levels of affluence, institutional effectiveness and the instrumental usefulness of local community are very different in each location. Using existing literature and case studies, the paper examines the ways in which different sources of support are used to mitigate vulnerability, how resilience manifests in each place as social and cultural constructions; and how and why the city might need to be considered as a whole to properly investigate these concepts.

Resilience

Community resilience to disasters, is an idea that has gained significant momentum in the last decade as way for policy makers and practitioners to identify the strengths and vulnerabilities of target populations experiencing disasters such as cyclones, floods and fires. However the concept may also has applicability for human induced disasters, such as terrorist attacks. Resilience as a social concept has its roots in biological and ecosystems scholarship, where resilience is seen as the ability of individual organisms and ecosystems to either ‘bounce back’ to their original form following a major disruption or to successfully adapt to new conditions following a disruption (e.g. Cumming 2011; Shaw and Sharma 2011; Ungar 2012).

The more social utilisation of resilience has been most popular in the more applied fields of the social sciences where an interest in community resilience has emerged over the last decade. In this emerging literature, the meaning of ‘resilience’ is carefully defined, requiring a relatively straightforward transition and interpretation from the natural sciences to the social world. One of the more high profile descriptions by Norris et al (2008) describes resilience as “a process linking a set of networked adaptive capacities to a positive trajectory of functioning and adaptation in constituent populations after a disturbance” (Norris et al. 2008). Adaptive capacities are described as robust, redundant, or rapidly accessible resources available to a community such as social capital, economic resources, community competence and information/communication (Norris et al. 2008). The availability of these resources to a community indicates a strong likelihood that the community will both recover from a disaster and be better adapted to future challenges. The major change in community resilience from more ecological definitions is that communities are understood to display agency in the way they prepare for, face and recover from disaster.

Urban community

While resilience is exhaustively defined, the literature does not conceptualise the idea of ‘community’ with similar fervour. The presence of community is often taken as a priori and its absence as a pathology (e.g Landau 2007; Lopez-Marrero and Tschakert 2011; Sonn and Fisher 1998). There is an important assumption in this conceptualisation that ‘the whole is greater than the sum of its parts’ (Norris et al. 2008). Norris et al concede that community can be understood in various ways, but do not explore this, choosing instead to use the geographically bounded form of community. Rather than engage with this, much of the literature on community resilience leaves the term undefined, or takes an instrumental view of community, giving it a quantitative, rather than a qualitative character. This has several consequences. The first is that great differences in the way that community is understood and enacted are not considered. For example, there is very little discussion of the differences in how community is understood between rural and urban environments and across cultural contexts, for example between the affluent developed world and the global south - both of which are explored in this paper. Recent monographs have used case studies of disasters in different global contexts but tend to come up with general remedies for disaster resilience that, like all universal generalisations, tend to reduce conclusions to the obvious or unhelpfully general. For example see Aldrich (2012) for a discussion on the power of social capital as a policy answer for building disaster resilient communities in any context. Social capital, or the benefits that individuals and communities derive from membership of social networks (Bourdieu 1986; Putnam 2000), is a powerful concept and there is little doubt that strong social networks provide material and emotional benefits in a disaster. But much of the literature ignores the specific socio-economic, political, structural and cultural conditions that lead to strong or weak reserves of social capital. Similarly, communities are also attributed with a level of agency that ignores the structural constraints of their wider context: “Endangered communities must be able to learn about their risks and options and work together flexibly and creatively to solve problems” (Norris et al. 2008).

These distinctions are not so important in rural areas, where geography and community invariably coincide. Inside the boundaries of a village or a small town there are often dense webs of affect and dependency and where mutual recognition and therefore norms of behaviour are clear and strong. However in urban environments in late modernity, this coincidence of geography and community cannot be assumed. Since the advent of the modern city in the West, they have become places where social relationships are transformed. Moving from a pre-modern existence where the individual is subordinated to communal norms and demands, to the more functional and compartmented social relationships of the city. The city in the developing world is in many respects more complex and challenging. The theories that have sustained urban sociology in the developed west since the industrial revolution like those of Tonnies, Weber, Simmel , the Chicago School and the Los Angeles School apply only partially or not at all in the emerging mega-cities of the global south. In the remainder of the paper, a city from the developed west, Brisbane Australia, will be contrasted with a mega city from the global south, Dhaka in Bangladesh to in order to make a useful, but incomplete, comparison of community, survival and resilience in two very different cities.

Brisbane

Brisbane is the state capital of Queensland, Australia and has a population of just over 1 million. It is located within the South East Queensland conurbation, with a population of approximately 2.5 million people (ABS, 2011). The city is located on the coastal Brisbane River estuary and natural floodplain and has experienced flooding on a regular basis since it was established in the early nineteenth century. Severe floods, similar to one experienced in 2011 occurred in 1894 and 1974 (National Climate Centre 2011). Following the 1974 flood, the Wivenhoe Dam was built on the Brisbane River to prevent such flooding in the future, but a combination of the volume of rainfall and a conservative water catchment policy following several years of severe drought meant that the dam was too full to prevent the 2011 Brisbane floods (van den Honert and McAneney 2011).

There were 24 lives lost during the 2011 floods, 21of these in the Lockyer Valley to the west of Brisbane where an ‘inland tsunami’ of water caused a severe flash flood, and a lack of warning meant many were swept to their deaths as they were stranded in motor vehicles and on the roofs of houses. The flood in Brisbane was more gradual and residents were able to evacuate homes and business with little loss of life or injury, but extensive damage to property. Flooding affected approximately 22,000 homes and 7600 businesses across 94 suburbs of the city (BCC 2012).

The response to these floods in Brisbane was the result of a number of important factors. The first of these was that the flooding, while severe, was largely limited in its effects to suburbs close to the river. This left the remainder of city relatively unaffected apart from short term power outages in the days following the flooding. Water had receded from most properties in three days after high water. While many residents of Brisbane got on with their normal daily lives, there were a large number of unaffected residents who were able to come of the aid of those who were flooded. This almost spontaneous response from so many volunteers, mostly anonymous, became informally known as the ‘mud army’. Up to 200,000 volunteers (Bohensky and Leitch 2013) assigned themselves to flooded homes, clearing out damaged belongings, removing mud and cleaning houses and businesses. While the mud army was not uniformly spread across all flooded areas, the numbers of volunteers threatened to overwhelm some areas and efforts were made by emergency service authorities to organise and in some cases limit the volunteer effort in certain places to avoid duplication and over enthusiastic clearing of damaged properties.

The second important factor was that Brisbane is a major capital city in one of the most affluent countries with one of highest standards of living in the world (UNDP 2013). Well resourced, managed and trained emergency response institutions such as the police, emergency services, the army, and power and water utilities were deployed almost as soon as floodwaters began to rise. High levels of generalised trust in these organisations meant that instructions were followed and there was a general acceptance of the priorities for flood relief that were imposed in the city by its institutions. The floods received saturation coverage in the local and national media as media outlets took a rare (and self-interested) approach to collaboration with local and state authorities to coordinate the recovery process (Carah and Louw 2012). Political leadership, through saturation media coverage, was visible and generally reassuring - political leaders’ approval ratings rose during the flood (Ludlow 2011).

The one caveat to institutional trust is that of a major market representative, the insurance industry. While some companies paid out policies promptly and fully, there were also companies that were seen to abrogate their responsibility to policy holders through withholding payments based on technical interpretations of flood related damage, or were considered to be irresponsibly tardy or miserly in their response to policy holders. The behaviour of insurance companies became a further cause exploited in the name of general solidarity, particularly by some political leaders.

On a more localised front, stories that might indicate a ‘community’ response in what might pass for community in the resilience literature are more ambiguous. Research conducted to date on local community and neighbourhood cooperation in the aftermath of the Brisbane floods indicate that stories of strong local support was not as consistent as those that describe the help of strangers (the mud army) or the of institutional actors like the Army, the State Emergency Services or the work of local government authorities in clearing debris, cleaning houses, removing public health hazards and restoring power (George 2013). Although a strong local community provided important material and emotional benefits for flood victims, its presence was not guaranteed, or indeed necessary, for satisfactory outcomes in Brisbane. The presence of strong and relatively competent public institutions ensured that residents without strong local networks were not abandoned.

Dhaka

Dhaka, the primate capital city of Bangladesh, is the world’s fastest growing mega city in one of the poorest nations on earth. If it continues its current annual growth rate of 2.5 percent per annum, its current population of 14 million will grow to around 25 million by the year 2050 (IGS 2012; World Bank 2007). Dhaka is an old city, its traditional boundaries have been in place since the 7th Century CE. The city is located on the delta of three massive rivers, the Bramaputera, the Meghna and the Padma (Ganges). While the traditional geography of Dhaka, like much of the rest of the country, has always been susceptible to annual flooding, population pressure has meant that settlement has now extended eastwards into very low lying areas. Dhaka is growing rapidly through rural to urban migration. Many migrants to Dhaka are escaping rural poverty caused by overcrowding and extreme climate events in the hope of a more secure existence (IGS 2012). The vast majority of new arrivals in Dhaka are living in informal settlements and slums, which account for approximately thirty percent of Dhaka’s housing (IGS 2012). People in these slums have a very tenuous existence, with most living in extreme poverty on a household income of one US dollar a day or less (Hossain 2012; Roy 2009). Dhaka has over 5000 individual slum settlements, housing 3.4 million people (Hossain 2012). People living in these conditions typically have no access to clean water, sanitation or other government services, they have rent extracted from them by extortion, they have no security of tenure and are politically disenfranchised (IGS 2012).

For the poorest of the poor in Dhaka, the social supports of networked community strong institutions and strong generalised norms across the city generally do not exist. In a study that has focussed on the strategies that the urban poor use to get by in everyday life in Dhaka, Hossain (2005) paints a picture of an atomised population, relying primarily on resources available to them in their immediate households. Where social capital is available, it is usually very local and based on kinship links originating in the village or district from where migration occurred, rather than reflecting any social ‘progress’ achieved in the adopted city. Research into social processes as an enabler for social mobility has characterised residents as limited in the development of social capital unique to the city by the unyielding ties of kinship, rural origin patron-client relationships in neighbourhoods, and exploitative and oppressive informal and unpredictable work circumstances (Hossain, 2005). These circumstances all conspire to severely limit the availability of, and access to, new information and knowledge.

Dhaka flood

The 1998 flood in Dhaka was one of the worst on record in Bangladesh. Over 67 per cent of the entire country was inundated. The flood was caused by extensive rainfall in the monsoon season (40 percent above average) in the entire catchment area of the Ganges-Brahmaputra-Meghna river system (Stalenberg and Vrijling 2009). A total area of about 100,000 km2 was flooded (Beck, 2005). More than 30 million people were affected by the flood including one million homes; a total of 918 people died (Stalenberg and Vrijling 2009).

For the urban poor affected by the floodwaters, the impact was devastating. Although loss of life was relatively modest, given the geographical spread of the disaster, most families who had to evacuate their homes lost, literally, everything. What few possessions people had were in the form of their house structure, usually hard won pieces of roofing iron and scrap timber; furniture such as beds, tables and perhaps simple appliances such as electric fans or a television (Rashid 2000). Livestock either drowned or was secured on vacant land in the hope they could be recovered later (Ahmed and Ahmed 1999). As most slum-dwellers work casually and locally in occupations such as rickshaw pullers, scavengers, labourers or beggars they also lost the ability to earn income for extended periods.

Women suffer particularly with an inability to attend to personal hygiene in private in a culture with very strong norms of modesty (Ahmed and Ahmed 1999). Cultural norms were not suspended in the circumstances, for example: “A recent study, however, explored female adolescents’ experiences during the floods and found that many of the young girls were subjected to offensive comments when walking in the floodwaters, despite their circumstances “ (Rashid and Michaud 2000).

There was some institutional support for slum-dwellers during and after the flood. Almost all social welfare and poverty relief in Bangladesh is carried out by large NGOs such as Grameen and BRAC and by international donors and flood relief was provided where possible to those worst affected. Local and national governments do not have planning or governance structures sufficient to deal with disasters (Haque, Grafakos and Huijsman 2012; Rashid 2000) and there is little forward planning for future disasters (Jabeen, Johnson and Allen 2010).

Community is finite and bounded in the slums - while kinship ties are strong and reliable, charity often stopped at these boundaries - the confines of one slum. These networks became extremely important in the aftermath of the flood because the levels of trust and norms of reciprocity were sufficient that money could be borrowed and lent with an expectation of repayment, resulting in redistribution of modest amounts of money and other resources to ensure the survival of the members of kinship groups (Aßheuer, Thiele-Eich and Braun 2012; Rashid 2000). This support on the one hand makes the difference between life and death for those with nothing else, but in terms of resilience it amounts to little more than a temporary flattening of income inequality among the very poor. The experience of one severe flood provides no capacity for the poor to prepare themselves better for the next flood. They must start their lives again after each flood.

Discussion and conclusion

The Brisbane flood was very much played out in the public realm. Through saturation media coverage, the heavy involvement of public institutions and the relatively low socio-economic polarisation characteristic of an affluent city in the developed west, those in the city who were not directly affected by floodwaters were able quickly identify with those affected. This identification led to a situation where Anderson’s (1991) ‘Imagined Community’ transforms into something more material. In other words, the conditions that exist in a city such as Brisbane are conducive to a constructed form of community that was relatively easily transferred, for the duration of the flood and its immediate aftermath, into an actual community which was then reinforced as it played out on television, newspapers and social media.

However, this community could best be described as ‘city-wide’ rather than local. Concentrating on the elusive ‘local community’ in a disaster is a risky proposition in a developed urban context. Local community in a city is contingent upon the confluence of a many factors such as low residential mobility, a reasonable level of demographic homogeneity and the absence of a satisfactory and accessible network beyond the boundaries of the urban or suburban neighbourhood (Walters and Rosenblatt 2008). Local community in an urban context such as Brisbane is difficult to develop through intervention when the state, the market and extra-local social networks meet so many instrumental needs. The literature is littered with examples that testify to the difficulty of creating urban community through better planning and social intervention (Talen 2000). The strength of the disaster response in Brisbane was the result of a strong public realm, strong institutions and a relatively low (but growing) level of social inequality, perhaps the two strongest features of contemporary liberal democracy. This is what will continue to underwrite the ability of residents to recover from and adapt to disasters in the future.

In Dhaka on the other hand, the situation was perhaps the antithesis of Brisbane. Dhaka is a city that is characterised by extreme poverty with a very small wealthy and powerful elite. The slum dwellers of Dhaka, those worst affected by the floods, could not rely on a strong state. Where government institutions are visible in Bangladesh, there is nowhere near the same level of trust in those institutions as there might be in Brisbane. Elected representatives for many slum dwellers are often seen as part of the problem rather than the solution (Banks 2008). The city in Dhaka is something to be negotiated and overcome in the pursuit of survival and advancement. Community is filial and kinship based and often pre-dates migration to the city. Rural migrants, who make up the majority of the slum dwelling population in Dhaka have merely established a beachhead in the city and rely on those who live in their immediate private and close parochial realm (Lofland 1998). The city in these circumstances has little to offer them in a crisis, and apart from some forays by non-state actors providing essential flood relief, slum dwellers relied on their kin to keep each other alive. The levels of trust and norms of reciprocity in this case are vital, they are bonding social capital (Putnam 2000) writ large.

The effects of a trauma such as flood cannot be understood by making general assumptions about communities as ‘stand alone’ phenomena and with essential characteristics that are independent of context in which they are found. ‘Resilience’ for the slum dwellers of Dhaka was almost exclusively a function of individual survival instinct and strong existing localised community based on long term ties of kinship and fictive kinship, pre-dating their slum based lives. The slum dwellers of Dhaka, in many respects live in a state of perpetual crisis (Aßheuer, Thiele-Eich and Braun 2012) - a precarious existence where security of tenure, employment, food, health are never taken for granted. When you have nothing, it is not difficult to return to that status. It is difficult to be resilient to the point that they are able to fundamentally improve their living conditions and to decrease their long-term vulnerability. (Aßheuer, Thiele-Eich and Braun 2012). The remainder of the city of Dhaka, apart from the organised interventions of large NGOs and donor organised remained unwilling or unable to assist those worst affected by the floods.

Resilience for those in Brisbane was in many ways more complex. If definitions of resilience are to taken into account, then the residents of flooded suburbs in Brisbane, to be understood as resilient had much more materially to regain after the flood than those in Dhaka. Resilience in this case is the ability to recover from or adapt to a disaster where that accomplishment is determined by far greater levels of affluence and security. This is not to say that the pathologies of anxiety, family stress, depression and despair were proportionately different in the two contexts. There are numerous reports of the human toll that these disasters took in both Dhaka and Brisbane. However the ways in which suffering was ameliorated and ‘normalcy’ returned to the slums of Dhaka and the suburbs of Brisbane are quite different. But for both, one must understand the city as a whole.

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