

# The role of social capital in community recovery post-disaster

How resilience can manifest through design processes and collective action



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## Introduction

The frequency and severity of natural and man-made disasters have risen considerably in the past decades as a result of rapid urbanisation, population growth, environmental degradation and climate change (Aldrich, 2012). The impact of climate change is set to exacerbate the global costs of disaster in the future, both in lives lost and damage to property, substantiating the need to examine factors associated with communities' capacity to recover post-disaster (Aldrich, 2012). In the wake of a disaster, vast populations struggle for access to water, food, adequate shelter and employment while others bounce back quickly, mobilising their survivors to action and attracting new residents (Aldrich, 2012). Current literature has accounted for this with strong emphasis on economic resources, assistance from government and non-government agencies and the severity of the disaster as the keys to recovery. It is the power of a communities' social resources to foster resilience and expedite recovery, however, that this paper will discuss in depth.

The social networks and connections within a community, or social capital, is crucial in mobilising each member in to collective action for disaster recovery (Nakagawa and Shaw, 2004). With emphasis on the role of bridging social capital

to engender heterogeneous relationships between small community groups and decisionmaking bodies, this paper will explore the value of collective co-creation and participation in bolstering communities' resilience (Kim et al, 2017). Within this framework, the role of design in building social capital in communities post-disaster will be analysed. This manifests in both the physical structures of community infrastructure as well as the processes of participatory design that impact the success of reconstruction efforts. These efforts have proven themselves to enhance social capital in vulnerable communities ubiquitously, examples of which will be discussed in detail later in the text.

## Literature Review & Discussion

### **Social capital and participatory processes**

Social resources in a post-disaster climate are the foundation for resilience and recovery as much as any material resource, according to Aldrich (2012). Understood as the networks that enable collaborative action, social capital is critical for recovery in the aftermath of a disaster. The myopic top-down approach to recovery is antiquated in a society that increasingly recognises the value of localised planning strategies. Aldrich asserts that "...social capital thrives in a political and cultural environment, where residents believe in their efficacy... [feel empowered] as citizens and trust each other and their representatives" (2012, p. 163). In lieu of this, this paper examines social capitals' contribution to the discourse of disaster resilience.

Social capital can be broken down in to 'bonding social capital' and 'bridging social capital', where 'bonding social capital' is defined as the tight relationships between family, friends and neighbours and 'bridging social capital' is the extension of social interaction outside the immediate community to boost resources for recovery (Kim et al, 2017). It is 'bridging social capital', the weaker social ties obtained in transgressing familiar social networks, that forms the core engine of recovery post-disaster. This collaboration between different community, non-government or government groups is fundamental to a societies' capacity to survive, adapt and rebuilt (Kim et al, 2017).

Synergistic relationships between communities and decision-making bodies such as local government are also essential to breaking centralised power and responsibility down to a citizen level (Correa, 2000). As outlined by UN Habitat, participation of all facets of the population in planning has a crucial role to play in sustainable urban development (2016). Participatory planning is an inexpensive resource that “...enhances local ownership, improves governance and accountability, and helps mobilize and allocate budget resources to local priorities” (UN Habitat, 2016, p.94).

### **Overview of case studies**

Two case studies will be discussed herein, in order to elucidate the complex roles of participatory processes and design in enhancing social capital, and the way this contributes to a community’s resilience post-disaster. The first case study is the 2011 Tōhoku earthquake and resultant tsunami in Japan and the second is the 2010 and 2011 earthquakes in Christchurch, New Zealand. These two island countries are situated on the Pacific Rim of Fire and share many geographic parallels, but their political and cultural contexts differ substantially and there is a large difference of scale; Japan’s population is almost 30 times the size of New Zealand’s (Dionisio and Pawson, 2016). Further to this, New Zealand’s population is concentrated in a small number of cities, creating disproportionate effects on their society and economy post-disaster while Japan has many cities and an extensive coastal development (Dionisio and Pawson, 2016). These factors are undoubtedly entwined with the responses of these nations and their local communities in addressing reconstruction post-disaster.

### **Tōhoku Earthquake - Japan**

The magnitude 9.0 earthquake that hit the Pacific coast of Tōhoku, Japan on May 11, 2011 resulted in tsunami waves up to 40m in some places and in the Fukushima Daiichi nuclear disaster (Tsuji et al, 2014). In the aftermath there were several key initiatives by the government and grassroots community organisations to rebuild in the spirit of ‘Machizukuri’; a progressive planning idea originating in Japan in the 1960’s (Dimmer, 2014). This is a method of inter-community dialogue that places strong emphasis on public participation, respect of local cultures and the

decentralisation of power (Dimmer, 2014). One such project was ‘Home-for-All’ (*Minna no ie*), a not-for-profit project led by Japanese architect Toyo Ito focusing on the architectural design and construction of small community houses. These community ‘homes’ were created to act as local bases in the heart of temporary housing developments for people who lost everything in the disaster (Delicado and Marcos, 2012).

#### *‘Home-for-All’ Initiative*

The Home-for-All project exemplifies the power of design to foster social connections, a point emphasised by Ito’s statement “We went back to the idea of architecture as a place to make people gather, a place that everybody can use” (Delicado and Marcos, 2012). These small centres can be built quickly to provide fast relief where residents can reconnect with their community (Dionisio & Pawson, 2016). The architects describe these community centres as “points” that will form a network enabling an alternative process of recovery; a bigger movement that counters the “heavy-handed” and “inaccessible” reconstruction that is forced on local communities from the top (Ito et al, 2013, p. 72). In this example we see the citizens placed at the centre of the recovery effort in collaboration with other community actors (designers), where those who are “making” the spaces and those “living” in them join in collaborative action. The effect of this initiative is manifold where the participatory design processes enable local communities to strengthen their ‘bridging social capital’ through transgressing familiar social networks, resulting in the empowerment of communities and the embedding of local knowledge to create contextual design outcomes.

#### *‘Imagining Shibanouchi’ Initiative*

In the same coastal communities of Tōhoku, a second example of collaboration between community actors to rebuild post-disaster can be seen in the ‘Imagining Shibanouchi’ project. The 1.2-kilometre-wide bay of Shibanouchi is home to approximately 800 people and has a long history of tuna fishing and oyster farming (Dionisio and Pawson, 2016). Following the tsunami, the national and local government announced plans to build a large seawall to protect vulnerable coastal towns from future disasters, despite the failure of existing seawalls elsewhere in Tōhoku to protect communities from the 2011 tsunami waters (Dionisio and Pawson, 2016). This initial debate turned however, at the behest of this small fishing

village that this would negatively impact the local marine ecology, the connection between these fishing villages and the ocean and thus the region's economy. The resultant emphasis on the need to promote the socio-cultural landscapes of Tōhoku and on the empowerment of the community aligns more closely with the Japanese principle of 'Machizukuri' (Dionisio and Pawson, 2016).

In the ensuing process we can identify the makings of social capital. Through a heterogeneous collaboration between decision makers, government actors and the local community of Shibitachi, the community were tasked with envisioning reconstruction scenarios where the relationship between the sea and their livelihood was maintained (Dionisio and Pawson, 2016). Facilitated by a team of professionals experienced in architecture, urban design, history and disaster risk management, residents were enabled to take more active agency in the recovery process. Their ideas were synthesised in to a coherent vision in the form of plans for evacuation, maps and diagrams that acted as tools for their integration in the official rebuilding processes that had previously been dominated by planners and the interests of the construction industry at the highest levels (Murakami, 2014).

This initiative inspires the kind of public engagement that is crucial for social resilience. The communities' involvement enhanced the quality of the plans as well as the chances of successful implementation due to the combination of centralised and community-driven action (Dionisio and Pawson, 2016). By involving the local people in the design process, the result is the creation of contextual and site sensitive housing and infrastructure. Charles Correa affirms this in 'Housing and Urbanization: Building Solutions for People and Cities' affirming, "...if we examine any of the major concerns of humanists and environmentalists today; balanced ecosystems, re-cycling of waste products, peoples' participation, appropriate lifestyles, indigenous technology, etc., we find that vernacular architecture has it all" (2000, p. 109). Further, by reinforcing community capabilities, these initiatives in Tōhoku exhibit methods of fostering community resilience and of building social capital so that local populations are better equipped to deal with disasters in the future.

## **Christchurch Earthquakes – New Zealand**

In 2010 – 2011 the city of Christchurch, New Zealand was hit by a series of devastating earthquakes. With vast portions of the inner city reduced to rubble and over 7,000 homes ‘red zoned’ (deemed irreparable), many communities were displaced causing far reaching economic, social and psychological damage (Carlton, 2013). Despite these events sparking sizeable community and government led initiatives, there was often little alignment and synergy between them which prohibited the successful decentralisation of planning power and respect of local wishes (Carlton, 2013). Conflict between the National Government and local communities in Christchurch over the drafting of the Central City Plan is a prime example of this, where the process of community participation was seen as “...paying only lip service to democratic obligations for public engagement” (Carlton, 2013, p. 11).

### *CERA and the ‘Share and Idea’ Campaign*

In the wake of the disaster, The Canterbury Earthquake Recovery Act 2011 (CER Act) was established, with its’ key purpose “...to enable community participation in the planning of the recovery of affected communities without impeding a focused, timely and expedited recovery”. The legislation emphasised the importance of community participation in the rebuild, however the import placed on a time-bound recovery processes hindered the incorporation of citizen participation (Carlton, 2013). Following from this, the Canterbury Earthquake Recovery Authority (CERA) was created by the National Government and granted statutory power including the ability to forcibly acquire land and overrule decision making of local governments in the city. In quickly instating this legislation, residents in Christchurch perceived this as a disregard of their democratic rights (Carlton, 2013).

Simultaneously, the Christchurch City Council (CCC) instigated the ‘Share an Idea’ campaign. Striving for widespread community participation, this project aimed to engage and involve local citizens in a six-week long consultation where participants were asked to submit their ideas for the city’s future via Twitter, Facebook, postcard and in person at the Share and Idea Community Expo with the intention to broadcast the project as widely as possible (Carlton, 2013). With a totally of 106,000 ideas from Christchurch residents, and from the global ex-pat population, the result of

this campaign is a clear example of effective co-creation that nurtured a sense of community and enhanced social capital while forming aspirations for the city's rebuild (Carlton, 2013). The ideas expressed by the community in the Share an Idea project were formulated to create a draft Central City Plan, however the responsibility for reworking the final design was passed from local to national government and was taken over by CERA. Local citizens perceived this as a further loss of community ownership over the rebuild and the participatory consultation of Share an Idea perfunctory (Carlton, 2013).

Despite the goals of CERA to empower and capacitate local communities to drive their own recovery and its role in securing national resources to help the community rebuild in the immediate aftermath of the disaster, it is clear that the centralisation of power stood in the way of local democratic leadership and hindered long term community resilience and recovery (Hayward, 2012). The result was a heightened perception within the community of their lack of power to instigate change that in turn de-incentivised their participation in recovery efforts (Carlton, 2013). It is unclear whether the social capital that formed during the 'Share an Idea' campaign endured, there were however several smaller grassroots community efforts instigated that mobilised people into collective action for disaster recovery.

#### *'Gap Filler Trust' and the Commons Project*

The final case study, the 'Gap Filler Trust' was one such community run project. A creative led urban regeneration venture that focused on 'temporary projects, events, installations and amenities' in the leftover spaces where buildings once stood, Gap Filler Trust provided space for collaborative work and community events that foster social and cultural interaction (Dionisio and Pawson, 2016). This enabling of bridging social capital is clear in the 'Gap Filler Trusts' project 'The Commons'. Situated on a prominent vacant site in the central business district of Christchurch that was made available by the Christchurch City Council for temporary interventions, The Commons provides a "...welcoming space for participation, collaboration, support and interaction as part of a transitional community" (Brand et al, 2019, p 12). Empowering local communities to experiment in temporary urbanism and to co-locate with likeminded initiatives this space has been host to live markets, outdoor cinemas, classes, live music, lectures and more (Brand et al,

2019). The success of the project is in its recognition that permanence does not need to be a prerequisite for generating value.

This kind of grassroots response of the citizens in Christchurch exemplifies the power of social capital in post-disaster recovery and the ability of temporary placemaking to connect different levels of community in collective collaboration and participation. Gap Filler Trusts' ability to turn the derelict rubble lots of the city centre in to "eccentric, inviting environments" is testament to the strength and adaptability of the community and the capacity of bridging social capital to affect the city's recovery process (Brand et al, 2014). Brand highlights the strength of this kind of temporary urbanism in the way it "encourages public participation, fosters community empowerment and facilitates positive interactions and experiences for communities in dire situations..." (2014, p.6). These elements are essential to generating the social capital needed for a communities' recovery post-disaster, and their resilience for the future.

To conclude the discussion, it can be seen through different case studies of community led or community-oriented initiatives in post-disaster Tōhoku, Japan and Christchurch, New Zealand that social networks and capital are achieved in different degrees of success. It is clear that the social connections fostered by collective actions during disaster recovery contribute to the building of more resilient communities and also that existing social capital facilitates their ability to effect change in collaboration with other community actors such as government and decision makers. It is thus important to cultivate social capital in communities affected by disasters through processes of participation in order to foster a sense of ownership, of place and of shaping a new identity as they take part in establishing their new identity.

## Urban Shelter Design & The Role of the Architect

"Our job as planners and architects is to understand just what is malfunctioning and set it right. Instead we start to design the houses ourselves... [we] forgot all about the organic and pluralistic nature of our traditional habitat – and went in for cloning. Result: the kind of inhuman housing estates we see everywhere in the world – from the Bronx to Moscow to Beijing to Singapore to Bombay."

- Charles Correa (2000) p. 108.



In this, Correa draws to light the position of planners and architects in the overall scope of the design process, highlighting their capacity to influence their environment for good or for bad. He continues, pushing for the decentralisation of the housing supply, asserting that we must “dis-aggregate our responses” and that only then will society obtain the “pluralistic qualities so essential to our habitat” (Correa, 2000, p.108). These “pluralistic qualities” or social and cultural particularities embedded in each communities’ fabric, are exactly what planners and architects should strive to imbue in the processes and outcomes of creating new habitats. It is then possible to surmise that the role of architects, planners and other design professionals is to facilitate the process of design, enabling those without technical skills in the field to express their desires and needs in a way that can be translated in to action.

The boundaries of the architects’ and planners’ power are shifting, and the new paradigm is one of giving support rather than solely providing solutions. This new ‘architecture of empowerment’ as Tovivich calls it, is centred around using architectural design processes as a tool to enable communities to co-create and make their own decisions (2011). This new role as reflective educators, providing support and empowerment to local communities requires a transformation in the traditional power relations between professionals and clients, examples of which have been discussed in the case studies of Tōhoku and Christchurch. The benefits of this paradigm shift, where participatory processes and co-creation are emphasised, is in the resulting community engagement and social capital that is cultivated, in turn creating more resilient and self-sufficient societies.

In analysing the role of practitioners and students in the design profession within the framework of urban shelter development in post-disaster communities, the need for planning principles that emphasise the need for community participation through all stages of reconstruction is essential. Planning principles that dis-aggregate responses, giving responsibility and resources to diverse community actors to allow for vast networks of connections that will facilitate bridging social capital in vulnerable populations. Despite the evidence derived from the case studies that community and grassroots led initiatives can have wide reaching socio-economic benefits for recovery post disaster, it is crucial that the decision making

bodies such as design professionals and government facilitate these ideas so as to ensure their longevity and success. In achieving this multi-layered landscape of collaboration between heterogeneous community actors in the design process and in collective action we have the potential to manifest resilient communities, prepared for an uncertain future.

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