ESSAY

COMMUNITY RESILIENCE
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Building Community Resilience for Future Epidemics

Leveraging on social networks, volunteers checked in on elderly residents in villages of Kenya to ensure they were well taken care of during the pandemic.
Image: Denis Ngai from Pexels

Beyond physical infrastructure and good decision-making, varied social ties and the collective actions and behaviours of people can build up a community's resilience to future pandemics and other shock events.

> Social infrastructure captures the interpersonal connections that tie people together. Societies require webs of ties to operate successfully under all circumstances.

As countries around the world fortify their defences to deal with the ongoing COVID-19 pandemic, what has emerged as a key success factor is the collective actions and behaviours of people. This essay discusses the importance of social ties and connections for building up reservoirs of resilience for future epidemics.

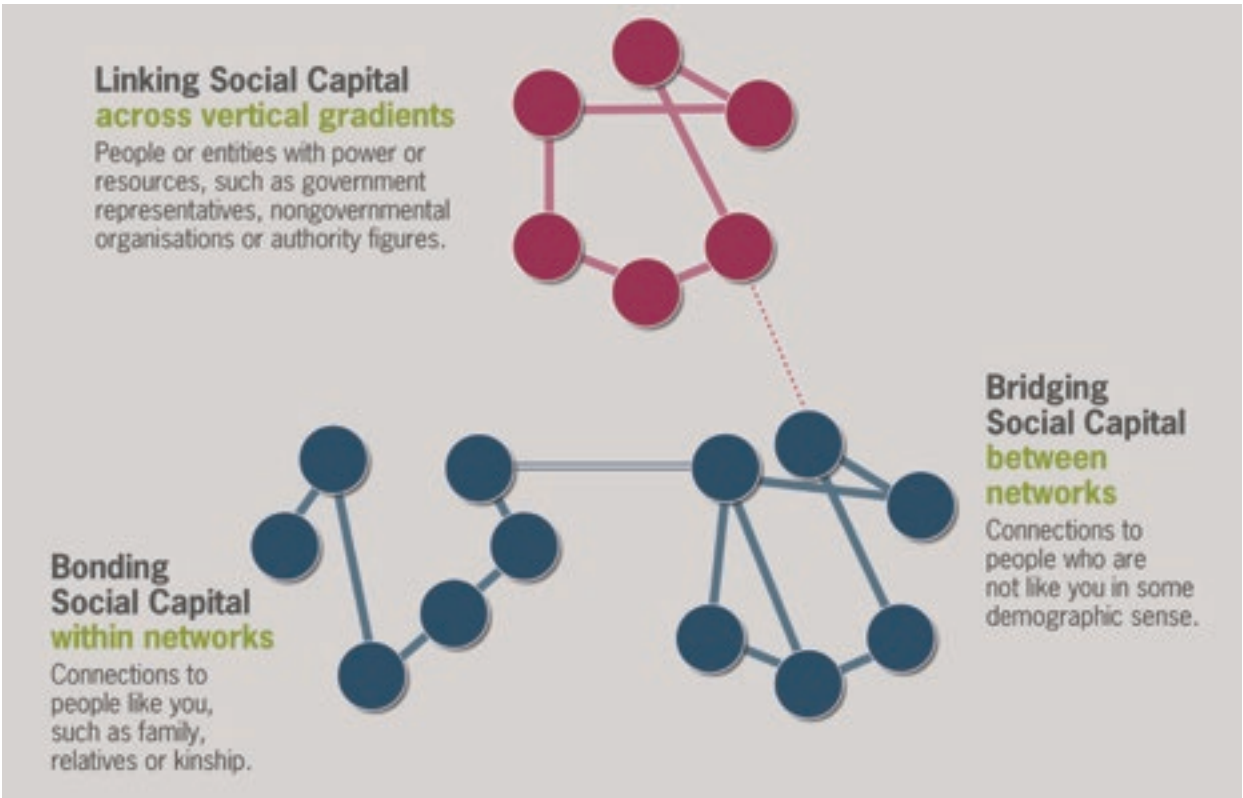
Social Infrastructure and Shocks

Cities face stressors and shocks—some with regularity, such as climate change-enhanced extreme weather events including typhoons, hurricanes, and flooding. Other shocks come with less predictability, such as the ongoing COVID-19 pandemic which has claimed more than 1.3 million lives globally.

When we envision the ways that planners and decision makers can mitigate the impact of such events, what first comes to mind may be obvious defences such as walls, plexiglass shields, and other aspects of the built environment.

These types of physical infrastructure—which include defences against tsunami, flooding and disease—are the most visible means of reducing the damage from shocks. For example, if we are concerned that sea water will regularly inundate a residential area near the coast, engineers may plan and build a seawall to keep the community dry. But while this type of infrastructure is obvious to construct and within the standard operating toolkit of many city designers, another type—*social infrastructure*—may play a more important role.

Social infrastructure captures the interpersonal connections that tie people together. Whether from neighbour to neighbour, or a local business person to an elected leader, societies require webs of ties to operate successfully under all circumstances. These connections come in different categories, depending on the types of people that they connect.



The interplay between bonding, bridging and linking ties illustrates different forms of social capital.
Image: Daniel Aldrich

Social Infrastructure: The Trio of Connections

Social scientists define the most common connections as bonding social capital. This describes the connections between family and kin. Bonding social ties delineate ties between people who are often quite similar; they may share an ethnicity, religion, or nationality. We know that people often find it most comfortable to interact with people who look, sound and think like them. In some cities, communities have strong ethnic identities—such as Chinatown or Koreatown in California cities. Other communities, such as those in Singapore, push residents away from bonding towards another type of connection: bridging social capital.

Bridging social capital details ties between people who may not look, sound or think alike. Instead, they are often tied together by an institution or interest. For example, when parents pick up their children from school, they meet recent immigrants, long-time residents, people who look like them, and people who do not. Similarly, a workplace can be the location where people make connections to people from different backgrounds. These ties are less common but bring an important diversity in thought and information.

The final type of connection is the vertical tie known as linking social capital, and it brings together citizens with those in positions of power and authority. It may be the connection between a kindergarten teacher and city mayor, or between a local resident and the prime minister. These connections are far

Mothers of the BoTu neighbourhood in Rotterdam interacting with King Willem-Alexander and Mayor Ahmed Aboutaleb.
Image: Resilient City Network

While safe distancing protocols keep us physically separated, our connections can nevertheless bring critical resources and assistance during this difficult time.

more rare than bonding or bridging ties but can bring the possibility of a channel of resources and information that would otherwise not be available. For instance, the SG Cares movement in Singapore encourages communities to work together with social services and government agencies to care for the vulnerable in society, whether they are low-income citizens or those who have seen better times but now face difficulties.

Resilient communities and societies need deep reservoirs of all three types of social connections to be able to mitigate shocks, navigate recovery, and return to a feeling of normalcy afterwards. These ties are critical because they bring with them important elements of everyday life and survival, including information, the ability to carry out collective action, and mutual aid. Extensive research on heat waves in North American cities has found that simply being old—a category many see as vulnerable—is not a strong predictor of the worst possible health outcomes, namely death. Instead, individuals who are elderly, isolated and without a social network are the most vulnerable. They are least likely to leave apartments to seek safer, cooler shelter elsewhere. This is where social networks, through neighbours and friends, can provide an elderly person dwelling alone with vital information or physical assistance should they be too ill to move. Those without such ties face more challenges in surviving a heat wave.

Public Health and Social Infrastructure

A number of communities around the world have been able to remain resilient in the face of the pandemic, and we can glean important lessons for the future of urban planning. The pandemic is an external stressor that is volatile, unpredictable, scaled up and beyond any one country's sphere of control. However, we can build on the existing layers of social resilience and achieve a new level of normalcy.

COVID-19 paves the way for social ties to build resilience in residents, neighbourhoods, and cities. While safe distancing protocols keep us physically separated, our connections can nevertheless bring critical resources and assistance during this difficult time. Across the United States, for example, neighbours have organised to deliver food, water, and supplies to people unable or unwilling to leave their homes. They have also used paper notes to communicate with people who don't have access to mobile phones and the internet, along with more high-technology platforms such as Facebook to organise in virtual space.

Through online birthday parties, anniversary dinners, and communal events, people are staying socially connected even while physically distanced. In the United States, musicians have been performing in parks to physically distanced crowds. Religious organisations have also been holding car-based services, with the leader standing on a platform and congregants in their vehicles. These activities provide the chance to renew relationships and strengthen our belief that we are not alone and others in society face similar challenges. Such deep reservoirs of social ties allow us to weather the physical and mental challenges of this pandemic.

Understanding community assets and the presence of institutional arrangements to facilitate social ties between residents and stakeholders within the community is paramount to building social trust. In Singapore, reciprocity towards healthcare workers was showcased with the MoCa Cares for Nurses initiative by the Moulmein-Cairnhill Constituency Office. They offered free lunches and priority queues for healthcare workers as a symbol of community support. These community-led efforts were all the more crucial during the COVID-19 pandemic for providing assistance, such as job support opportunities for residents, and creating an ecosystem for volunteerism and the community spirit to thrive. Beyond the COVID-19 responses, residents of the Moulmein-Cairnhill constituency have also formed a volunteer group to look into ways communities can partner government agencies to address local climate change issues.

In Los Angeles, volunteers and community organisations rallied to distribute food to people in need during the COVID-19 pandemic.
Images: Joel Muniz on Unsplash

Drive-in church services in Florida allowed people to continue religious observances with other members of the community.
Image: SOPA Images Limited / Alamy Stock Photo

Former adviser of the Singapore Moulmein-Cairnhill constituency, Melvin Yong (centre), led the MoCa Cares for Nurses initiative to show support and care for healthcare workers.
Image: Melvin Yong

Social Infrastructure in Times of Need

Even before shocks arrive, deeper reservoirs of social ties help communities engage positively with authorities and make decisions that reduce their vulnerability to the event. Research using mobility data on more than a million North Americans living in low-lying, coastal areas revealed that while the majority moved from high-risk flood areas to areas further inland before the arrival of major hurricanes, many did not leave despite warnings from authorities.

A strong predictor of whether residents would leave vulnerable cities before hurricanes arrived was the degree of bridging and linking ties within the community. Where people had more of these ties, they were more likely to leave potential danger zones and find safe shelter elsewhere. With multiple sources of information, residents could better accept advice from authorities and see it as legitimate.

Once shocks arrive, societies have been able to draw on social infrastructure to get through calamities. For example, after Japan's triple disasters—a 9.0 magnitude earthquake, tsunami waves above 30 m, and nuclear meltdowns at Fukushima—people living in the Tohoku region faced a number of different challenges. This included the deaths of loved ones, loss of possessions, and well as anxiety and fear resulting from the atomic accident. Through rigorous research, it emerged that the most important factor in fighting post-traumatic stress disorder and anxiety was bonding social ties. People with stronger connections to neighbours and people living near them had the sense that they were not going through it by themselves, and had a shoulder to lean on.

As COVID-19 reached Japan in the spring of 2020, communities with stronger linking ties—connections to decision makers and government agencies—were able to reduce the likelihood of infections; that is, where local citizens trusted the information from government, believed in the science advocated by medical experts, and were willing to undertake collective action. COVID-19 infection rates could be slowed tremendously when communities took on physical distancing, mask wearing, and remote working, limiting their daily mobility and reducing their chances of exposure.

Citizens in Tokyo followed regulations of mask wearing, temperature taking and social distancing.
Image: Kyodo News

Civic stewardship groups in Singapore provide opportunities for citizens to beautify the environment while fostering strong community bonds and a sense of ownership.
Image: National Parks Board

> When building new policies and programmes, designers and city planners must think about the potential consequences for bonding, bridging and linking ties.

Takeaways for Community Resilience

Given the importance of social infrastructure in responding to shocks and during epidemiological crises like COVID-19, urban leaders and city managers can learn many lessons. First, social infrastructure—like its physical counterpart—can be built and strengthened; that is, our stores of trust, interactions, and reciprocity are not set in stone.

The Ibasho programme, initiated in Japan, the Philippines, and Nepal to build social connections among elderly displaced by shocks, has shown that even among the elderly—many of whom are typically less likely to build new networks—social ties can be created and widened. Through the programme, people strengthen their social ties, increase their sense of efficacy, and deepen their ties to the community.

In particular, cities should review their investments in mitigation and adaptation, and ensure that they are at least maintaining, if not increasing, social infrastructure. Many decisions about zoning, new construction, and even education can fracture existing ties. When building new policies and programmes, designers and city planners must think about the potential consequences for bonding, bridging and linking ties. Singapore, for example, deliberately invests in bridging ties by creating housing patterns which bring together people from different nations and cultures.

Decision makers and leaders should also make a concerted effort to invest and maintain horizontal and vertical connections between and to residents. While we may take social infrastructure for granted, and physical infrastructure may be a more obvious and standard way to protect societies, social ties remain key to building and maintaining resilience in communities.