

**Exploring Urban Resilience:
Violence and Infrastructure Provision in Karachi**

by

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*A lane in Orangi before and after the construction of sewer lines.
Courtesy of OPP-RTI.*

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Abstract

The Urban Resilience and Chronic Violence project at MIT extends the scientific concept of resilience to the analysis of chronic conflict. This thesis builds upon the project by testing the usefulness of a socio-spatial capital resilience model for cities confronting persistent violence, which offers alternative strategies for thinking about a violence-resistant city. The first test of the socio-spatial capital model is through the analysis of resilience theory – how does the definition of resilience change in each discipline? The literature review concludes that the idea of stability is the foundation of any resilience definition, which is problematic for cities suffering from chronic violence. The second test of the model is the examination of violence in Karachi. Using the Orangi Pilot Project (OPP) as a strategy of socio-spatial capital formation, the Karachi case study explores the relationship between the expansion of the OPP in the last 30 years and the levels and types of violence in Orangi, an informal settlement in Karachi. Lyari, which also suffers from violence and poor access to sanitation, is its comparison. This thesis finds that in both towns, residents have found innovative ways to cope with violence and poor development at different scales, therefore making both towns resilient. This thesis concludes by arguing that conceptualizing a city resilient against violence does not move a violent city towards peace, and proposes that the field of conflict transformation may be better suited to the study of chronic conflict than resilience.

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Chapter 1. Urban Violence, Resilience, and Socio-Spatial Capital

Just as language has no longer anything in common with the thing it names, so the movements of most of the people who live in cities have lost their connection with the earth; they hang, as it were, in the air, hover in all directions, and find no place where they can settle.

-Rainer Maria Rilke, 1903

1.1 Violent Cities and Urban Resilience

Henri Lefebvre's "right to the city" has become a literal fight for the city (Lefebvre 1968). Massive rural-urban migration and increased life expectancy have drastically altered the socioeconomic and physical landscapes of cities, resulting in extreme stresses on urban labour markets, housing, and infrastructure. The city has been transformed into a microcosm of the nation, housing diverse groups of people in the same space, which has often led to battles for control over the city's land and resources. While grand acts of violence have been traditionally enacted in battlefields, contemporary conflicts are now being waged in the roads and buildings of cities, recasting them as primary sites of global violence.

The shift in the unit of analysis in political economy from the nation-state to the city complicates the nature of urban violence. As Sassen (2002) writes, some cities have become key actors in transnational capital flows, creating a global network of cities linked by economic engagement. Cities are dislocated from their parent states, and yet continue to function as the most visible and prosperous symbols of nations. Urban violence thus spans the transnational, national, and city levels, all concentrated in the single metropolitan space.

The Urban Resilience in Situations of Chronic Violence¹ project at MIT recently applied the concept of resilience to the study of urban conflict in an attempt to elucidate how different cities respond to varying sets, time horizons, and scales of violence. What types of coping mechanisms exist, both formal and informal, at the state and community levels to combat conflict? Why are some cities more adept at dealing with urban violence than others? Can violence reduction strategies or pathways to resilience in one city be transferred to another? The urban resilience approach aims to cut through the various sectoral approaches to violence in order to develop a systemic approach to chronic conflict.²

1.2 The Problem

While it is imperative to examine how people, communities, and institutions deal with violence, using the specific idea of resilience to understand urban violence may not be meaningful. The most common definition of resilience is the capacity to bounce back after a shock. This particular explanation of the word works well to describe the capacity of a system to withstand acute shocks and its ability to quickly return to equilibrium. However, this definition breaks down when the concept of resilience is extended to chronic violence. How can a

¹ The author's participation in the Urban Resilience in Situations of Chronic Violence (URCV) project at MIT under the direction of Prof. Diane E. Davis was a major motivation to write this thesis. The URCV project is funded by USAID and is interested in the idea of a city resilient against violence. The cities examined in this project are Johannesburg, Medellin, Sao Paulo, Mexico City, Nairobi, Kigali, Managua, and Karachi. The final report synthesizes insights from field research in each city when possible and theoretical approaches to violence and resilience.

² Different sectoral approaches to violence prevention and reduction involve revamping the criminal justice system, instituting good governance, engaging in crime prevention awareness, and expanding national security. The idea of urban resilience conceptualizes a multi-prong approach to urban violence that cuts through different sectors by focusing on the single city space where violence and citizenship are enacted.

city continuously affected by violence rebound to its status quo? What is the equilibrium state for a chronically violent city? Can a perpetually violent city be considered resilient simply because it still persists? A nuanced understanding of urban resilience is needed for the sake of thoughtful violence prevention and reduction strategies in the city – is the goal of conceptualizing a violence-resilient city to preserve normalcy or to move toward a different state with less violence?

1.3 Socio-spatial Capital Model

This thesis explores how urban resilience can be adapted to the study of chronically violent cities. Specifically, this thesis will focus on the social capital resilience model, proposed by Varshney (2002) in his investigation of ethnic conflict in India. In his book, Varshney asks why some cities are more susceptible to ethnic violence than others, and finds that the existence of civic structures in communities explains some of the variation in the rates of ethnic violence. He argues that the breakdown of civic life in some Indian cities decreased inter-ethnic engagement between Hindus and Muslims, while increasing intra-ethnic engagement, which led to ethnic violence. In Ahmedabad, for example, the decline of the Textile Labour Association and the unwillingness of the Congress Party to further invest in civic structures contributed to religious clashes, as compared with cities that have had strong community organizations like Surat. Varshney finds that most Indian cities with poor civic life suffer from increased ethnic conflict.

This thesis builds on Varshney's analysis of social networks and institutional resilience and introduces the built environment into the model. The

existence of inter-ethnic social capital in one area explains why it is less vulnerable to ethnic violence. How do the spatial qualities of a neighbourhood affect its risk of violence? For example, is a dilapidated area in the periphery of a city with decaying infrastructure and poor accessibility more prone to conflict than a well-planned community in the heart of the city? Does the topography of an area affect its susceptibility to violent activities? This thesis uses Marcus's (2007) definition of spatial capital to complement Varshney's social capital approach. Marcus (2007) describes how spatial capacity and spatial integration of a place theoretically influences urban living. This thesis adapts the following definition of spatial capital from his work in order to qualitatively understand the spatial characteristics of a town and its relationship to violence – the degree to which urban spatial form supports urban social activities. This combined socio-spatial capital model thus examines both inter-group social networks in and spatial qualities of an area as drivers of resilience against violence.

1.4 Introducing Karachi and the OPP



Fig. 1: Map from Gayer (2004) emphasizes the complex geopolitical context of Pakistan.

The case study chosen for socio-spatial analysis is Karachi, Pakistan. A historically global city (Anjaria and McFarlane 2011), Karachi has endured years of ethnic, political, sectarian, and terrorist violence, along with the more traditional types of conflict associated with a post-colonial, developing city. Violence in Karachi is enacted on four levels – international, national, provincial, and metropolitan (Figure 1). Pakistan has been suffering from conflicts related to trans-national Islamist terrorist groups and anti-Western sentiments post-9/11, which have played out in the city. Karachi has also dealt with the consequences of varying developmental patterns across the country and the region, which make the city an attractive destination for immigrants. At the provincial level, the urban, industrial city has had trouble relating to its rural hinterland of Sindh, and its cosmopolitan character has led to ethnic and language wars between ethnic Sindhis and other immigrants. Provincial politics and city politics often clash; the *Muhajir*³ *Qaumi* Movement (MQM) is supported by Urdu speakers and has a significant support base in Karachi, while its rival, the Pakistan People’s Party (PPP) has popular support in parts of Karachi and in the rest of Sindh. The Sindh provincial assembly is dominated by Sindhi-speaking politicians, and in areas where Sindhis are in the minority like in Karachi, people resent being governed by “the other” (*Express Tribune* archives).

Military presence in the city also complicates the criminal justice situation in the city. The Pakistan Rangers, a paramilitary force controlled by the national government, are often called into Karachi to help the police calm the city. Opinions on the Rangers, who usually guard the country’s borders, are divided.

³ *Muhajirs* is a term frequently used in Pakistan to describe Urdu-speaking immigrants from India.

In Karachi newspapers, some residents extol the mere presence of Rangers, which is threatening enough to ward off violent attacks. Others complain about the informal expansion of the powers of the Rangers to illegally assault residents and independently carry out investigations (*Dawn* archives).

In the midst of international, national, and provincial conflicts, Karachi is suffering from an urban crisis. It was unable to handle the massive influx of immigrants from India and the Northwest Frontier Provinces (NWFP) during the 1970s and 1980s, which resulted in the creation of multiple *katchi abadis* (unplanned, informal settlements) all across the city (Yusuf 2011b). These *katchi abadis* have minimal links with state-based urban services, and residents in these informal settlements often rely on “urban specialists⁴” for access to water, sanitation, electricity, and land. Many of the economic sectors in the city are divided by ethnicity; for example, the *Muhajirs* dominate business while the Pathans are leaders in the transport sector. The ethnic enclaves found in the economic life of the city add another dimension of conflict to the urban crisis in Karachi (Figures 2 and 3).

⁴ Anjaria and McFarlane (2011) draw on Hansen and Verkaaik (2009)’s idea of “urban infrapower,” which measures how quickly things get done in a city. “Urban specialists,” essentially the *xyz-wallahs*, work in both the formal and informal spheres to connect urban resources and services to residents.



Fig. 2: Karachi, the megacity, home to 15 million people. Photo from Martin Roemers.

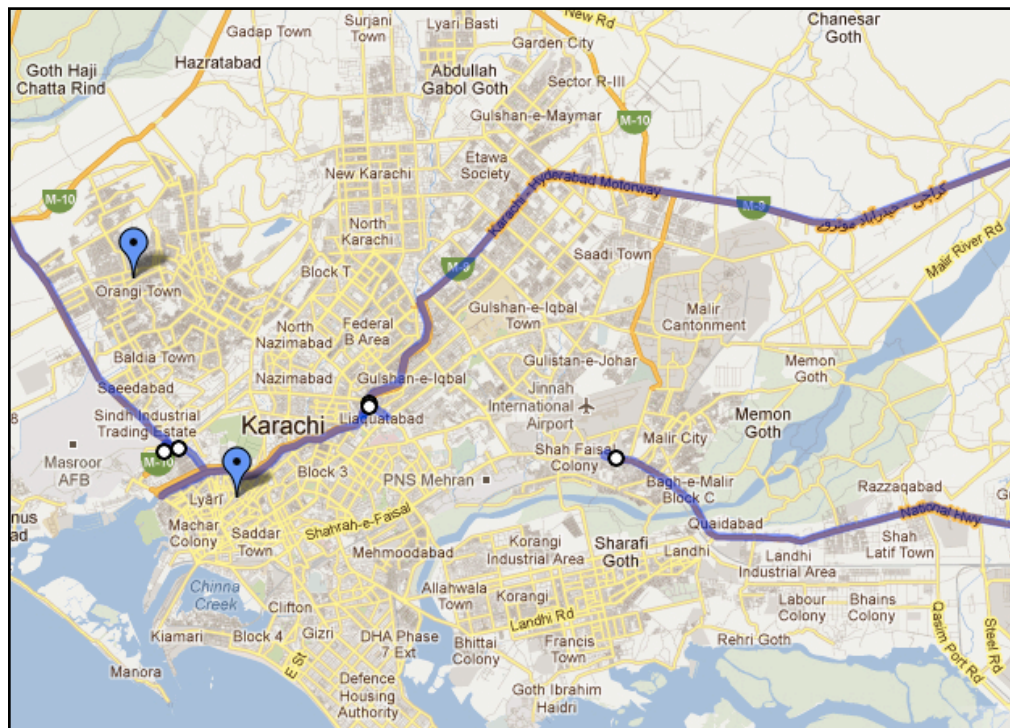


Fig. 3: Only 3 highways connect Karachi to the rest of Pakistan. The general perception in the city is that the Pathans, who dominate the transport sector, control the routes in and out of Karachi (Jaffri and Verkaaik 2011), illustrating a spatial dimension to the conflict. Source: Google Maps.

The different types of violence in Karachi, from ethno-linguistic to political violence, call for different approaches and interpretations of conflict. Varshney's (2002) hopeful civil society hypothesis has already been mentioned in the formulation of the socio-spatial capital model. The author argues that inter-ethnic conflict can be averted through institutions that build inter-ethnic social capital and thus decrease the necessity for intra-ethnic ties. Brass (2005) disagrees with Varshney. In his analysis of communal violence in India, he describes the "institutionalized riot machine," which orchestrates violence all the way from the state to the informal settlements. These riots can be turned on and off at the will of the state, and at this level of violence, civic structures and social capital arguments break down as war breaks out across the city. The third interpretation of conflict comes from Ring (2006), who writes about everyday conflict resolution and negotiations in a multi-ethnic apartment in Karachi. Using the apartment complex as a metaphor for Karachi, the author describes a conflict resolution framework where the production and resolution of conflict is one method of creating social ties. In Ring's (2006) model, conflict is inevitable but manageable, and does not necessarily escalate into violent confrontations. The Karachi case study will use the approaches of these authors to understand conflict and resilience in Karachi.⁵

In this perennially violent urban landscape, Dr. Akhtar Hameed Khan, a Pakistani social scientist, founded the Orangi Pilot Project (OPP) in 1980 in Orangi, one of 18 towns in the city that is often at the epicenter of political and ethnic violence. Leveraging existing efforts of residents to build sewer lines, the

⁵ Wescoat (2007) provides more interpretations of conflict in India.

OPP provides technical assistance and helps each lane coordinate secondary sewer line construction (Hasan 2007). Using the internal/external concept, the OPP believes that residents need to take responsibility for internal sanitation (secondary sewer lines and house latrines) while the government focuses on building primary sewer lines and waste treatment plants (Hasan 2007). As of August 2011, approximately 90% of sewer lines in Orangi have been constructed and financed by the residents (OPP-RTI).

The OPP expanded in the late 1980s and early 1990s to provide other services, besides low-cost sanitation, in the area. The Orangi Charitable Trust (OCT) and the Karachi Health and Social Development Association (KHASDA) assist residents with access to credit and health education. The OPP is also involved in the mapping, documenting, and surveying of *katchi abadis* in Karachi to create a comprehensive map of existing water and sanitation lines in the city for Union Council (UC) representatives and engineers from the Karachi Municipal Corporation (KMC) and the Karachi Water and Sewerage Board (KWSB). Although the OPP model has been replicated (with OPP assistance) 284 times in Pakistan, most of the efforts have been unsuccessful (Hasan 2007).

The OPP has successfully cultivated horizontal social capital between residents and has attempted to bridge the state-*katchi abadi* gap through its internal/external concept. The construction of sewer lines and latrines has cleaned up the streets, reducing public health and mobility problems in the town (Zaidi 2001). The OPP principle of including citizens in the building and financing of sewer lines is part of the larger idea of a collaborative approach in developing the built environment and building social capital in the process.

Healey (1998) describes how implementing a multi-stakeholder approach to urban interventions and recognizing and leveraging local knowledge is key in fostering good social networks and in creating a community. This approach, as followed the OPP, is especially crucial in a cosmopolitan city like Karachi with a weak state.

Returning to the central question of urban resilience, this thesis examines how the presence of an inter-group civic structure such as the OPP and the improvement of urban services affected violence in Orangi. Lyari, a town in the center of Karachi, which also suffers from a paucity of urban services and an excess of violence, is used as a comparison with Orangi. Lyari is an example of an area that suffers from political and gang-related violence produced by Brass (2005)'s "institutional riot machine," which complements the civic structure approach in Orangi. The comparison between Orangi and Lyari will explore the following questions: why does the OPP exist in Orangi and not in Lyari? What are the differences in the types and levels of violence in Orangi and Lyari? Are there comparable social capital-building institutions in Lyari? Do differences in spatial capital explain the differences in the levels and types of violence in Orangi and Lyari?

1.5 Structure of the Thesis

The following chapters draw upon both the theoretical literature on resilience theory and empirical studies on violence in Karachi and the externalities of the OPP to explore socio-spatial capital and urban resilience against chronic violence. Chapter 2 outlines the evolution of the concept of

resilience in different fields and points out some of the problems in using resilience to study chronically violent cities. Chapter 3 discusses the methodologies of examining violence in Karachi and the OPP, as well as the challenges in obtaining data. Chapter 4 delves into the history of violence in Karachi from 1980 to 2010, and looks at the spatial dynamics of conflict in the city. Chapter 5 looks at the levels and types of violence in Orangi and Lyari, and examines the effects of the OPP on violence. Chapter 6 attempts to bring together lessons learnt from resilience theory and the OPP to propose a shift from resilience to conflict transformation, which is better suited to the study of chronic violence.

Chapter 2. Resilience in Different Disciplines

*More and more I have come to admire resilience.
Not the simple resistance of a pillow, whose foam
returns over and over to the same shape, but the sinuous
tenacity of a tree: finding the light newly blocked on one side,
it turns in another. A blind intelligence, true.
But out of such persistence arose turtles, rivers,
mitochondria, figs -- all this resinous, unretractable earth.*

-Jane Hirshfield, 'Optimism' in Given Sugar, Given Salt, 2001

Before bringing in resilience to the study of chronic violence in cities, it is useful to consider the origins of the word and understand how it has filtered through different fields. Can the concept, with its roots in mathematics and engineering, be transferred to sociology? How has each field modified resilience? How can some of the concepts raised in resilience theory relate to the study of urban violence? This chapter reviews some of the definitions used in mathematics, economics, psychology, ecology, urban planning, and disaster management.⁶

2.1 Examples

According to the Oxford English Dictionary, the word 'resilience' comes from the post-classical Latin word *resilientia* or the "fact of avoiding." In the 17th century, resilience also acquired the meaning of having the capacity to rebound. One of the earliest known examples of the usage of the word occurs in Sir Francis Bacon's work, *Sylva Sylvarum* (1626). Bacon refers to the act of rebounding when he writes, "Whether there be any such Resilience in Eccho's" (OED). This notion

⁶ Zhou et al. (2009) have provided a comprehensive list of different definitions of resilience. See Appendix.

of recoil emphasizes the pathway of the system back to its original state – how quickly and easily can a system recover? How long can a system resist exogenous shocks without being forced to change states?

In psychology, this act of bouncing back from a shock is referred to as resilience (Tugade et al. 2004). In Freud's *Mourning and Melancholia* (1915), although he does not directly allude to resilience, he describes the two paths the mind can take after a traumatic incident – after deviating from the normal state of mind, an individual can “work” back to normalcy through the act of mourning or veer off into the depths of melancholia. The latter poses an intriguing question about the general concept of resilient cities – are there any examples of cities that have veered off into uncontrollable violence and have transformed into a different system or do cities usually come back to some semblance of normalcy after a period of high violence?

The OED also lists elasticity as a definition of resilience, which refers specifically to the quality and capacity of an object to resist change compared to the process of rebounding. This notion of elasticity is used in mathematics and engineering when describing the ability of materials or machines to bounce back to its original position and form after a shock. Bodin and Wiman (2004) point out here that in mathematics and the applied sciences, resilience and elasticity fall under the larger category of stability sciences, and the emphasis is on the stability of a complex system, or the capacity to remain at equilibrium despite being buffeted by exogenous forces. How a complex system responds to stress depends on the number of components in the system and the strength of their

interactions. The more components a system has, the higher its complexity and the higher its fragility (Bodin and Wiman 2004).

This idea of mathematical complexity raises some interesting questions about the study of violence. The number of components in a complex system can be likened to sources of violence in a city. Karachi, for example, experiences many different types of conflict ranging from terrorist attacks by militant groups to gang wars to politically-motivated target killings to ethnic and sectarian strife. All these sources of violence are also strongly linked to one another. Political parties in the city are often formed on ethnic, sectarian, and linguistic lines, and depending on the triggers of violence, these parties attack different groups for different reasons. By comparison, the biggest source of violence in Mexico City, another area considered chronically violent, is the drug cartels. How should the number of agents of conflict in a city direct the scale of violence reduction strategies? Is it easier to tackle the problem of violence when there are only a few sources, like in Mexico City? How does the strength of connections between the sources of violence play into the levels of violence? Is it easier to find weak nodes in the expansive web of violence in Karachi and destroy them, hopefully taking down other nodes through a Domino effect, or is it easier to chip away at different levels of vertically integrated drug cartels in Mexico City? As an immensely complex system where every sphere of human life engenders some sort of conflict, how has Karachi managed to endure on the brink of extreme fragility?

The usefulness of mathematical complexity in explaining stability in social and ecological systems led C.S. Holling to extend resilience into ecology. He

reframed the concept, moving away from a mechanistic, deterministic model with a single equilibrium point, to fit the existence of multiple steady-states in ecological systems (Bodin and Wiman 2004). Holling (1973) writes, “Resilience determines the *persistence of relationships* within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and parameters, and still persist. In this definition *resilience is the property of the system and persistence or probability of extinction is the result*” [emphasis added]. In other words, Holling defines resilience as the capacity of a system to withstand multiple shocks without fundamentally changing into a new system.

Holling’s (1973) definition involving multiple steady-states and the rise in prominence of the field of complex adaptive systems, the study of relationships between humans and nature, eased resilience into the social sciences. In economics, for example, a discipline obsessed with moving towards equilibria, the concept of economic resilience embodies both the return to steady-state or a new “normal” and the ability of an economic system to absorb exogenous shocks and still retain its normal functions (Hill et al. 2010). This dual definition allows economists the flexibility to work on different time and market scales. For example, when responding to an oil supply shock in the short-run, economists can try to bring oil prices or supply back to equilibrium while considering the overall capacity of the larger economic system to withstand and respond to numerous exogenous shocks over the long run. Not only can they determine how systems change over time, they can also investigate the changes in how they change (Bodin and Wiman 2004).

The concept of long-run and short-run shocks in economics presents an interesting question for the analysis of violence. One can conceptualize two types of shocks – episodic violence characterized by periods of peace separated by violent attacks (short-run shock), and chronic violence when violence is always in the background (long-run phenomenon). In a city experiencing chronic violence, it is useful to consider the relationship between acute violence and chronic violence, and the value judgments associated with each category of violence. Does the presence of acute violence make a society better off compared to when it experiences chronic violence? If effective violence reduction strategies make violence in the city less chronic (and thus more episodic), is this considered a sign of progress? Is working within the certainty of violence more conducive to the sustained operation of the city than infrequent, unanticipated acute episodes of violence? These are useful questions in thinking about time horizons in the study of violence, and how resilience can be defined in the short-run and in the long-run.

The introduction of resilience in disaster management and environmental studies laid the foundation for conceptualizing a resilient city. In the face of climate change and global weirding, how can cities and communities protect themselves from acute shocks like natural hazards and chronic stresses like rising sea levels? The social vulnerability framework, often used in disaster planning and environmental management, explores the relationships between resilience, robustness, and vulnerability. For example, in Wutich's (2007) study of urban water scarcity in Cochabamba, Bolivia, she describes resilience and robustness as opposites to vulnerability, where robustness is the ability to maintain functions

without adapting, and resilience is the capacity to adapt to shocks without moving to a different state. Here, she delves into the subjectivity of resilience, something crucial to the application of the concept to the study of chronic violence. Since complex adaptive systems can achieve multiple equilibria, resilience may not always be positive or desirable (Wutich 2007). Poverty, for instance, is a stable condition and is thus resilient, yet undesirable and not robust. Perhaps robustness may be a more selective and meaningful criteria for cities because any positive or negative reaction to a shock can be considered evidence of resilience, rendering the concept moot.

Thinking about positive and negative (or criminal) resilience in the context of chronically violent cities provides some structure in directing violence reduction policies towards states of positive resilience, but also raises many more questions about the nature and desirability of states of negative resilience. An example of negative resilience is when a community is physically and socially isolated from the state but has access to basic amenities and livelihoods because it is governed by non-state armed actors like gangs and terrorist groups. Because the community is protected by these opposition groups, it suffers from less violence compared to other areas of the city. While this is negative resilience against violence, is it necessarily bad? Ultimately, the community is safe and has decent living standards. Is negative resilience an oxymoron? Perhaps the bifurcation of a concept that is intended to only have positive results should be defined more narrowly.

Olson (2007) reflects on this struggle of using the concept of resilience to describe post-disaster community organization. In her case study of Hurricane

Katrina, she writes that most of the people and institutions affected by the disaster are not going to return to normal. Indeed, a new steady-state has to be found, incorporating the personal, social, and environmental losses caused by Katrina. In order to articulate this feedback loop, she re-defines resilience as “the generation of a capacity to *adapt to a changed environment* by continually creating new ways to cope with loss, access, personal or organizational resourcefulness, and invent protections against future vulnerability” [emphasis added]. Unlike Holling, she emphasizes the existence of coping mechanisms *between* states. Perhaps this position of thinking about a changing environment or system (even a continually changing one that characterizes chronically violent cities) is a better way to conceptualize urban resilience against conflict.

Vale and Campanella (2005) further articulate post-shock adaptations to a changing environment. Using a variety of international case studies, the authors describe the importance of the narrative of resilience, while acknowledging the limitations of its “return to normalcy” definition. Figure 4 highlights the multiple ebbs and flows of coping activities during the post-disaster phase, recalling Olson’s idea of a changing steady-state. One of the axioms of resilience mentioned at the end of Vale and Campanella (2005) emphasizes the value of urban reconstruction as central to individual resilience after a shock. The authors refer to post-disaster urban redevelopment as “a highly visible enterprise that conveys an almost heroic sense of renewal and well-being,” and describe the value of architectural design and urban planning in recovering from the shock and in commemorating the natural disaster.

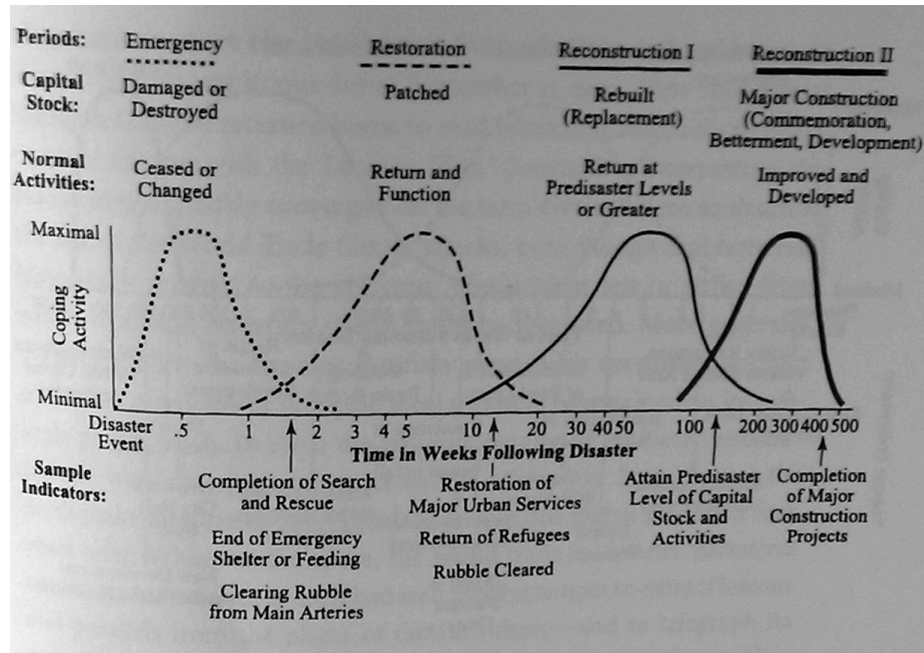


Fig. 4: One model of coping mechanisms during disaster recovery. Source: Vale and Campanella (2005)

Simone and Rao (2011) continue the discussion of space in conceptualizing urban resilience. In their analysis of Jakarta's political economy and 2030 master plan for the city, they advocate mixed-use zoning to cater to the city's majority, as defined by the "in-betweens." They argue that the key to Jakarta's prosperity and eventual status as a global city is social, economic, and physical mobility, which should be reflected in the planning of the city. Essentially, the physicality of urban form needs to reflect the heterogeneity of the social space. Instead of segregating the slums from the urban megaprojects, the master plan for 2030 needs to incorporate different classes and ethnicities equally across the space of the city. Spatial resilience for Simone and Rao is the capacity to best adapt to changing socioeconomic mobilities in the city through flexible zoning practices.

2.2 Is Resilience Meaningful?

The various definitions of resilience in different fields emphasize that stability and the preservation of equilibrium are the underpinnings of resilience. This poses multiple problems for the study of chronic violence in cities because the equilibrium is not a desirable state. Further, in a city devastated by chronic violence, there may not be any time to recover from one shock before being affected by another, which makes even a flexible definition of resilience as envisioned by Olson (2007) and Vale and Campanella (2005) irrelevant. The next three chapters will move from resilience theory to an empirical study of Karachi. They will explore the relationship between socio-spatial capital and urban violence in Karachi to analyze the viability of resilience and to investigate possible alternatives that crystallize from the case study.

Chapter 3. Examining Violence in Karachi: Methodological Challenges

The screaming wind transplants the soil/ particle by particle.../ All the forces of nature/ crowding man off his perch/ so that the land can return to its ways.// In this city of scarce sweet water and little rain/ each man protects his rood of greenery with panicked care.

-Taufik Rafat, *Karachi*, 1955

Violence in Karachi and the work of the OPP in the midst of chronic conflict form the crux of the case study of urban resilience in the city. While this thesis is about exploring urban resilience against violence in theory and empirics, it is also an exercise in studying a violent city from afar. What kinds of research materials exist for desk research? How does one triangulate the truth when presented with a multiplicity of seemingly accurate but conflicting points of view? Secondary literature on urban violence in Karachi and the OPP is abundant, but the existence of and access to specific data like the number of deaths in Karachi or the number of sewer lines built by the OPP in a particular year is spotty. This chapter looks at some of the challenges of collecting and interpreting data about violence in the city.

3.1 Data Collection and Analysis

When embarking on this project, the initial idea was to correlate the rates of violence in Karachi and Orangi to the expansion of sewer lines by the OPP from 1980 to 2010. Was the rate of construction of sewer lines lower during periods of high violence? The second part of the analysis involved comparing the levels and types of violence in Orangi and Lyari. Are water and sanitation-related incidents of violence higher in Lyari than in Orangi? Does the existence of

a social capital-building organization like the OPP have an effect on violence levels in Orangi? This is the fairly idealized version of the project.

The first obstacle was trying to collect data on violence in Karachi. There are many international and local websites⁷ devoted to violence in Pakistan that offer numbers on homicide rates, number of deaths related to terrorism, gender violence, political violence, and sectarian strife. Unfortunately, the available data exists across different time and space scales, units, and topics. For example, there is very little aggregated data on violence at the city level for Karachi from 1980 to 2010, although various websites, books, and journal articles provide some information on violence at the national or provincial levels over different periods of time. Of course, data at the town or town council level for Karachi is non-existent.

Most of the websites and books devoted to violence statistics in Pakistan listed newspapers as their main source of information. Many of the online English newspapers, like *Dawn* and *Newsline*, have searchable archives so a database was started to address the need for city and town level information on violence with the help of newspaper searches. This was an arduous process, complicated by the diversity of reporting styles and techniques.

The Pakistan Criminal Records website and the book by Ahmar (2005), *Violence and Terrorism in South Asia*, proved to be enormously helpful in laying out the skeleton of the database. The website aggregates incidents of violence from different Pakistani English newspapers and tags each news article by city.

⁷ Examples of helpful websites are the South Asia Terrorism Portal, Citizen-Police Liaison Committee, and Pakistan Criminal Records.

Ahmar's book painstakingly lists events related to violence and terrorism at the national level. Each entry is coded by city and includes information on the number of deaths, injuries, and material destruction, often cross-checked with newspapers and government reports when estimates wildly vary between sources. Ahmar (2005) covers violence from 1971 to 2004, while the website has aggregated news articles from 2008 to the present. The gaps in the years were supplemented by data from the Human Rights Commission of Pakistan (HRCP) reports and *Dawn* archives. The database does not contain information for the years 2005, 2006, 2007, and 2009 because reported data was either very poor or mainly descriptive.

Literature on ethnographic fieldwork in the city was very beneficial in understanding the social fabric of the city. Inskeep's (2011) *Instant City* and Ring's (2006) *Zenana* complemented the data collection and analysis process, and provided a social narrative for data derived from news reports.

It is important to note here that all of the written materials used in the sources were in English, which should be recognized as a limitation to the interpretation of violence from the dataset. Sindhi and Urdu newspapers would have adopted different approaches to the reporting of violence in Karachi. A further iteration of the dataset should include Sindhi and Urdu newspapers in enriching the dataset in order to best triangulate the insights gleaned from an analysis of newspaper reports on violence in Karachi. "Ground-truthing" the database and news reports with social survey research and interview methods are also warranted.

3.2 Dataset: Violence in Karachi, 1980-2010

The database created for this thesis contains 1,217 entries about incidents of violence in Karachi from 1980 to 2010. Incidents of violence in this thesis are defined as any event that causes human deaths, injuries, and material destruction. This period was selected to coincide with the start of the OPP in 1980 and observe its expansion over 30 years. Each violent event contains the following variables: year, month, location in the city, type of violence, brief description of the event, number of deaths and injuries, commodity involved (if any), scale of destruction (neighbourhood(s) and city), and the source of information.

Locations were particularly hard to code because either towns or town councils were not mentioned in “citywide violent events” or incidents were reported according to the police station they were associated with. When possible, landmarks and police stations were checked with the CPLC website, Google Earth, and Google Maps to approximate the town.⁸

The types of violence are categorized according to the different sources of violence operating in the city. Figure 5, which is adapted from Moser (2004), summarizes the different categories of violence in Karachi and some of its manifestations.

⁸ To further complicate the process, conversations with journalists and scholars in Karachi allude to the fact that towns share very soft and nebulous borders, and that people often do not navigate the city using towns and roads but landmarks. For this initial collection of data on violence in Karachi, however, the dataset still contains information at the town level.

| Types of Violence in Karachi | | |
|--------------------------------|---|--|
| Primary Category of Violence | Perpetrators and Victims | Conflict Outcomes and Spatial Manifestations |
| <i>Political</i> | <ul style="list-style-type: none"> • State • Political parties | <ul style="list-style-type: none"> • Political target killings • Conflict between armed members of political parties |
| <i>Institutional</i> | <ul style="list-style-type: none"> • Mediating state institutions (E.g. land, water, sewage, development and electricity agencies) • Informal institutions (E.g. NGOs, media) • Police and Rangers • Private sector • Citizens | <ul style="list-style-type: none"> • Police encounters and custodial killings • Vigilante justice • People protesting against institutional and state actors • Attacks on police stations |
| <i>Economic</i> | <ul style="list-style-type: none"> • Gangs • Resource mafias • Robbers/Dacoits • Traders • Businessmen | <ul style="list-style-type: none"> • Street crimes • Robberies • Kidnappings • Economic disputes • Arms dealing • Drug trafficking • Gang wars • Many land disputes occur on squatter land |
| <i>Ethnic</i> | <ul style="list-style-type: none"> • Ethnic groups (E.g. Sindhis, Muhajirs, Pathans) | <ul style="list-style-type: none"> • Ethnic violence • Target killings |
| <i>Religious and Sectarian</i> | <ul style="list-style-type: none"> • Islamist groups • Sectarian groups (Sunnis v. Shias) | <ul style="list-style-type: none"> • Attacking Christian buildings, Sunni mosques, and Shia <i>imambargahs</i> • Attacking religious processions |
| <i>Social</i> | <ul style="list-style-type: none"> • Families • Friends | <ul style="list-style-type: none"> • Gender violence in homes • Disputes between families and friends • Gratuitous and everyday violence • Target killings for personal reasons |
| <i>Terrorist</i> | <ul style="list-style-type: none"> • Terrorist groups • International targets (E.g. U.S. Consulate, Sheraton Hotel) | <ul style="list-style-type: none"> • Attacking foreign symbols (fast food chains, embassies, foreign workers) |

Fig. 5: A synthesis of the different types of violence coded in the dataset.

The categorization of violence in this dataset might appear deceptively simple but it is one way of clearly understanding and presenting the major agents of violence in Karachi. For discussion purposes, they are presented as pie charts in subsequent chapters. However, the following diagram (Figure 6) shows some of the common combinations of violence that appear in the dataset, which illustrate the complexity of coding a single event. Each incident in the dataset is coded according to the primary source of violence, while the description contains more information on the secondary sources of violence and its socio-spatial manifestations.

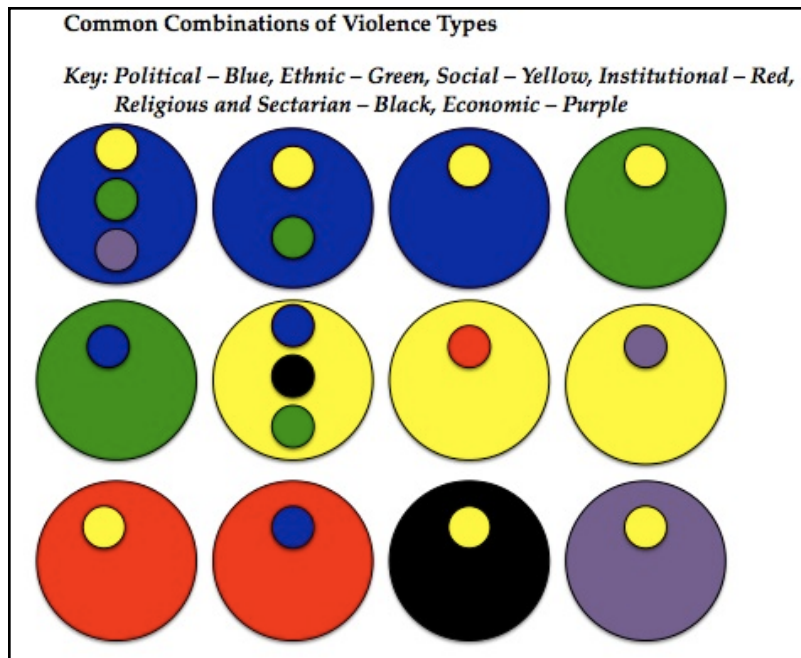


Fig. 6: Coding violence in the dataset was a complex process. The pie charts in this thesis focus only on the primary types of violence as identified in the newspaper reports.

This dataset is far from robust. Crimes appear to increase towards the end of the 30-year period, simply because more data became available online. There are large gaps in the dataset because no information was available or incidents

were purely descriptive in the sources. Another major challenge in dealing with violence in Pakistan is that many crimes go unreported, which means that this database is a tremendous understatement of violence in the city. For example, *Dawn* reports that between January and June 2010, 1,175 women were affected by 940 incidents of violence in Sindh but First Information Reports (FIRs) were only lodged for one-third of the events. The media will probably cover visible, large-scale events like political riots and gang wars, but the everyday conflicts involving domestic disputes, robberies, and deaths and injuries arising from family feuds are grossly under-reported. Future empirical research on violence in Karachi can consider non-police sources, like information collected by ambulances affiliated with the Edhi Foundation. Unfortunately these types of sources are only found in the city and are not available online.

The dataset and associated graphs and charts are not merely quantitative in nature; the process of creating the dataset transformed into a qualitative exploration of the texture of violence in Karachi. Where do people get killed most often? Why are armed motorcycle riders murdering so many people? How does the semiotics of foreign weapons exacerbate violence in the city? How has the language of reporting on violence changed over the last 30 years? How do people change their quotidian activities during riots? These types of observations gained from making the database allowed for a clearer picture to emerge about the relationship between the history of violence in the city, its urban form, and how residents navigate and interact with their city.

3.3 Orangi and Lyari

Once the Karachi dataset was completed, entries coded with Orangi and Lyari were copied and set up in different databases. The lack of specificity in locations affects the validity of these town datasets. Often, articles mention that Orangi and Lyari were affected in city-wide riots but the death toll is an estimate for the whole city. In order to best present a holistic profile of violence for each town, these events coded as “city” under locations with their aggregate death toll are included in the town databases whenever Orangi and Lyari were affected. While the numbers in these datasets are not useful, the trends in violence and a comparison of the different types of violence in these towns are interesting.

The socio-spatial capital resilience model in this thesis rests upon the understanding of formal and informal social networks in Orangi, Lyari, and Karachi. This analysis would have been helped by data on the socioeconomic profiles of the city and the two towns but this information is unavailable. Pakistan’s last census was in 1998, and subsequent censuses have been postponed because of outbreaks of violence. Even if there were a more recent census, the data would have been collected at the city level and not at the town level. The city of Karachi website also does not contain this information so once again, newspapers were the main source of information. For this part of the project, more analysis-driven newspapers like *Newsline* were useful in investigating the sociological underpinnings of each town. *Dawn* news features on Youtube (in both English and Urdu) about crime in Karachi and Lyari were incredibly beneficial in visualizing the datasets and in understanding the relationships between violence and the built environment.

3.4 Orangi Pilot Project

The OPP's website lists information on the financing and construction of sewer lines from the last fiscal quarter. While attempts were made to obtain copies of all the quarterly reports from 1980 in order to track the rate of sewer line building across time, they were unsuccessful. Instead, working with Dr. Khan's books and Arif Hasan's substantial articles on the history and evolution of the OPP was very helpful in understanding the OPP model and its efforts in building horizontal social capital between residents and vertical social capital between the town and state authorities. World Bank (2010) and Asian Development Bank (2005) reports on water and sanitation problems in Karachi, as well as maps and surveys of water and sewer lines prepared by the OPP-RTI, have been crucial in contextualizing the urban servicing problem in the city. Once again, a more qualitative approach based on a variety of international and national sources has allowed for a more multi-disciplinary and multi-sectoral understanding of violence, a phenomenon with multiple deep roots.

Chapter 4. Karachi

In every dust particle of the city rage a hundred cataclysms.

-Adapted from the poetry of Mirza Ghalib

Home to 15 million residents, Karachi is the economic hub of Pakistan. The city contributes 20% of national GDP, handles 95% of international trade, and is responsible for 40% of provincial revenues (ADB 2005). Often called “mini Pakistan” because of its diverse demographic profile, the city has been the dream destination for immigrants from all over Pakistan and India (Budhani et al. 2010). Unfortunately, the unchecked and unplanned growth of the city, combined with political infighting and the mafia-zation of all urban commodities, has created a city always teetering on the brink of civil war.

This chapter attempts to unravel some of the threads in the tapestry of violence in Karachi. It will provide a brief overview of the types and trends of violence in the city using the data aggregated from multiple news sources, and will offer some insights into the spatial dynamics of conflict.

4.1 History of Violence in Karachi: 1980-2010

Before delving into the 1980s, it is useful to step back and contextualize the waves of violence that have been attacking the city. Even before Partition in 1947, Karachi endured sporadic ethnic, sectarian, and political conflicts because of its attractiveness as a cosmopolitan, industrial city in the Indian sub-continent (Budhani et al. 2010). After Partition, however, conflict in the city increased as Pakistani politicians conducted their own version of the Great Game in the country. Political violence escalated through the 1950s and 1960s and pitted the

Muhajirs against the Pathans over their divided political allegiances (Yusuf 2011). The early 1970s were characterized by the “language riots,” which arose from the Sindh provincial assembly’s decision to mandate educational institutions to teach the Sindhi language (Budhani et al. 2010). The Urdu-speaking *Muhajirs*, who were fighting for cultural, economic, and spatial rights to the city, retaliated through mob violence (Budhani et al. 2010). This wave of ethnic violence was quelled through political negotiations and law enforcement (Budhani et al. 2010).

In the late 1970s and early 1980s, military dictator, General Zia ul-Haq, came into power, and banned all political activity. Zia’s regime polarized politics in Karachi – university campus groups formed anti-Zia groups and Zia’s supporters, the Islamists, transformed into militant groups through their involvement with the Afghan *jihad*⁹ movement that started in 1978. Further, Pakistan’s support of the *mujahideen* in Afghanistan led to the creation of an unregulated arms market in Karachi, and the city eventually developed into a major transport node for Afghan weapons and drugs controlled by gangs in Karachi, mostly centered in Lyari (Yusuf 2011b; Budhani et al. 2010).

The start of the violence dataset in 1980 picks up the entry of Kalashnikovs and other weapons smuggled into Karachi. Figure 7 presents a rough idea of the peaks and troughs of violence in Karachi over the 30-year period. While very little data is available from 1980-1985, the descriptions of violence during this time reflects the changing nature of violence in the city with the appearance of Soviet and Afghan weapons. For example, in the early 1980s, homemade bombs were the weapons of choice for warring political and ethnic factions. Towards

⁹ A *jihad*, or struggle, is usually waged by Islamist fighters (*mujahideen*) for control of land.

the mid-1980s, however, reports start describing teenaged boys roaming the streets, guarding their ethnic enclaves and playing with Kalashnikovs like they were toys. Gayer (2007) reports that between 1986 and 1989, gun prices decreased by 40% to 50%, and argues that in the 1980s, the availability of weapons provided a sense of empowerment and wonder to the disenchanted young men of Sindh. The transnational Afghan *jihad* movement created heavily armed militant groups out of political and ethnic factions, and laid the foundation for a perennially armed civil society.

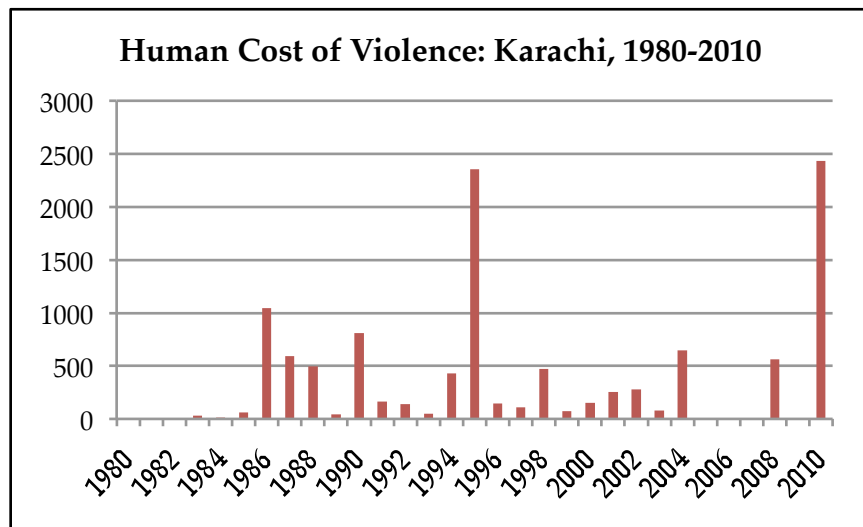


Fig. 7: The human cost of violence in Karachi (the total number of deaths and injuries) from 1980 to 2010

While violent campus politics was tearing the city apart, the ethnic profile of Karachi was changing. In the 1980s, the Pathans started moving to the city from the Northwest Frontier Provinces (NWFP) and Afghanistan. Since city planning was non-existent, *katchi abadis* (informal settlements) had sprung up all over the city, many of which were organized by political and ethnic affiliations. When the Pathans moved to Karachi, they took over the governance of some of

the settlements in the peripheries of the city, and branched out into the transportation sector (Yusuf 2011b; Budhani et al. 2010). The division of labour in the city thus became inextricable from ethnicity and place of origin with the Pathans controlling transportation and the Muhajirs dominating business and shipping.

Jaffri and Verkaaik (2011) point out how the influx of Pathans changed Karachi and threatened the *Muhajirs*. Most of the immigrants from Afghanistan and the NWFP tended to be working-class and anti-Shia, which fuelled sectarian tensions already present in the city. The authors refer to the increasing number of Pathans in the city as the gradual “Talibanization” of Karachi. The Pathans settled in the peripheries of the city, mainly in Sohrab Goth near Federal B and Qasba Colony. Their involvement in transportation proved to be a very visible threat to the *Muhajir* community because of the layout of highways going in and out of Karachi. Jaffri and Verkaaik point out that there are only 3 expressways linking Karachi to the rest of Pakistan – the National Highway, the Super Highway, and the M-10, which passes Orangi (Figure 3). The *Muhajirs'* perception that the Pathans controlled transportation, and thus transportation networks, intensified and spatialized the fight between ethnic groups for space in the city.

The 1985 Bushra Zaidi riots in Orangi were the first of many ethnic wars that would shut down large parts of the city. Although this event appears as a mere dot on Figure 7, it is responsible for the much of the violence on the graph from 1986 to 1988. A Pathan minibus driver accidentally ran over a *Muhajir* college student in Liaquatabad, leading to one and a half years of ethnic riots in

Orangi, Nazimabad, and Liaquatnagar between the Pathans, Muhajirs, and the Biharis (Gayer 2007; Siddiqui 2011). In response to escalating ethnic tensions, the *Muhajir Qaumi* Movement (MQM) was founded as a militant student group fighting for the rights of *Muhajirs* with the assistance of weapons supplied by the Afghan *jihadis*. The city fractured further into groups of ethnic enclaves fiercely guarded by private armies. Many parts of the city became inaccessible to police and security forces, and political parties (Sindhi PPP and MQM) engaged in vicious games of kidnapping and torturing their opponents (Yusuf 2011b; Budhani et al. 2010).

Finally, in 1992, the Army and the Rangers were called in for Operation Clean-up by the Pakistani government, targeting MQM leaders and MQM-controlled areas. Figure 8 shows how the city was divided into *Muhajir*, Pathan, and mixed settlements. Most of the violence originated in the northern parts of the city, which forced many families to escape to the south of Karachi, which had remained relatively peaceful (Yusuf 2011b; Budhani et al. 2010).

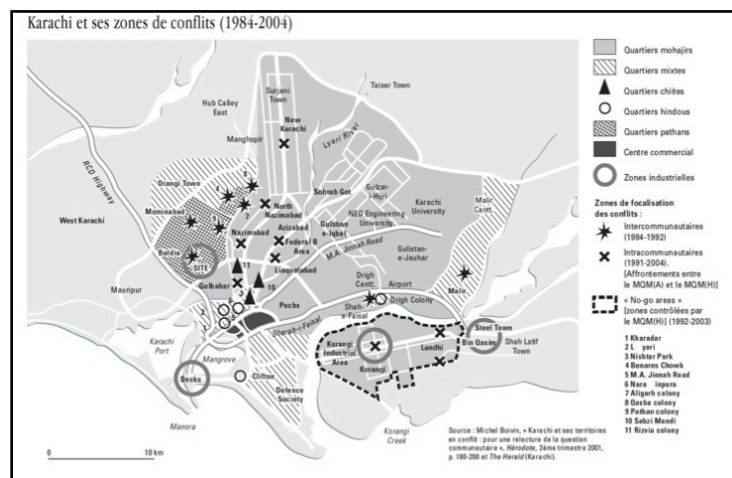


Fig. 8: Gayer (2004) illustrates a heavily divided city from 1981 to 2004. Karachi is divided into ethnic and political enclaves, as well as “no-go” zones in Korangi.

The period of 1993-1996 witnessed excessive ethnic, political, and sectarian violence, as exhibited by Figure 7. MQM leaders were actively hunted, killed, and exiled by the government. News from this period from the dataset details the murder of many Shia professionals on the streets of the city, and both Sunni mosques and Shia *imambargahs* were popular targets of bombs. This wave of sectarian violence was different from the one in the 1980s, which was usually marked by opposing religious processions attacking one another. At the end of this period, MQM leaders briefly retired from the political scene to regroup and plan their comeback, although political violence in the late 1990s continued to occur (Budhani et al. 2010).

The September 11 attacks in 2001 proved to be the next turning point in Karachi's history. With the Talibanization of Karachi and the general increase in anti-Western sentiment across the Muslim world, the targets of conflict became more international, which is reflected in the dataset. In May 2002, a suicide bomber killed 11 French nationals at the Sheraton in Saddar, who were helping the Pakistani Navy build a submarine (*Dawn* archives). Attacks on embassies and the Pakistani-American Cultural Center became more frequent, and symbols of the West, like Christian charities and fast food chains, became entrenched in the web of violence in Karachi.

While political parties, ethnic factions, sectarian groups, and the Islamist groups were tearing the city apart, the burgeoning population was suffering from conflicts related to urban resource scarcity. Unlike other developing cities, like Mumbai, which face similar challenges in providing collective goods and services to a rapidly growing population, Karachi is home to a highly

weaponized citizenry. Therefore, any conflict, whether political or social, has a tendency to escalate into a violent confrontation. In the Karachi dataset, for example, there are multiple examples of personal disputes between families, friends, and neighbours, which end in deaths or injuries caused by guns. Urban developmental problems have become common triggers for violent attacks.

The lack of state involvement in city planning and the division of the city's resources by ethnic and political groups have created urban resource mafias. Often, these mafias are tied to political parties, and the presence of these ethnic-political-resource mafias has further fragmented an already divided city. The water mafia steals water from illegal hydrants and sells it to *katchi abadi* residents not connected to the water supply at inflated prices, often leading to water riots (*Dawn* archives). The land mafia, which has perhaps become one of the most destructive forces in the city, forcibly takes over plots in the city and demands protection money from people with no formal property rights (*Dawn* archives). In fact, a large proportion of the recent economic violence in the Karachi dataset is attributed to clashes between the land mafia, the police, and people in informal settlements.

Violence in Karachi towards the end of the 2000s is a complex mix of political clashes, institutional violence, and socioeconomic conflict. Political parties are still engaging in violent strikes, riots, and target killings to establish Karachi as their stronghold. The police department, which has effectively become another arm of political parties, often engages in custodial and extra-judicial killings, often leading to multiple instances of vigilante justice on the part of the people. While sectarian and ethnic tensions have died down, socioeconomic

conflict as a result of a weak labour market, inadequate housing, and the daily struggle for basic amenities like water, education, and sanitation services, has increased. As the next section will point out, Karachi at the end of 2010 is more a victim of the state's incompetence and neglect than a city divided by ethnic and sectarian loyalties.

4.2 Trends in Conflict

The dataset presents some interesting trends in violence in the city from 1980 to 2010:

- In the 1980s, many of the violent incidents were large-scale bombs in public places with massive death tolls. With the escalation of political violence in the 1990s and the growing popularity of political target killings, violent events increased in number but decreased in number of victims. For example, in August 1983, a bomb thrown at a police station in Liaquatabad killed 31 people, while in July 2008, 400 people were target killed in the city through individual shootings (*Dawn* archives). Interestingly, these target killings cause more widespread panic and shut down larger parts of the city than bombs in public places because of the seeming randomness.
- Using ambulance data, Mian et al. (2002) argue that political affiliation is the most common reason for homicide in Karachi. They find that people who died in their sample were 34 times more likely to have attended political processions and 19 times more likely to have been to political meetings. Figure 9, which shows the distribution of the different types of

violence, emphasizes a similar trend. Besides social violence (which also encompasses all target killings not accounted for and thus may be deceptively larger), political violence is the second biggest source of conflict in Karachi. While the mid-1990s may have shut down the city because of intense political clashes, political violence in Karachi has not abated and continues at a smaller but more persistent scale.

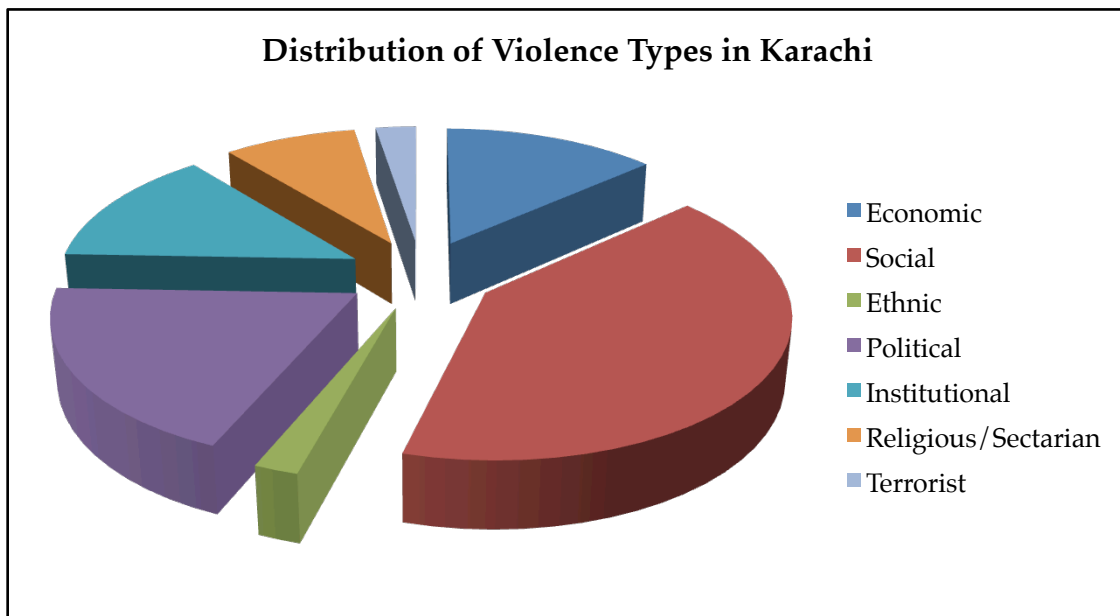


Fig. 9: The largest sources of violence in Karachi from 1980 to 2010 are social, political, and economic.

- Figure 9 also points out that the largest sources of violence in the city are social, political, economic, and institutional, which implies that political confrontations, ineffective state agencies, police corruption, and an acute lack of jobs is driving the violence in Karachi, and not ethnic and sectarian fault lines. This is useful for people in the city dealing with violence reduction and prevention because developmental problems have

pragmatic solutions, unlike Huntingtonian “clash[es] of civilizations” (Huntington 1993).

4.3 Spatial Dynamics of Conflict

The dataset also yields some insights into where the conflict hotspots are in Karachi. Figure 3 is reproduced again below:

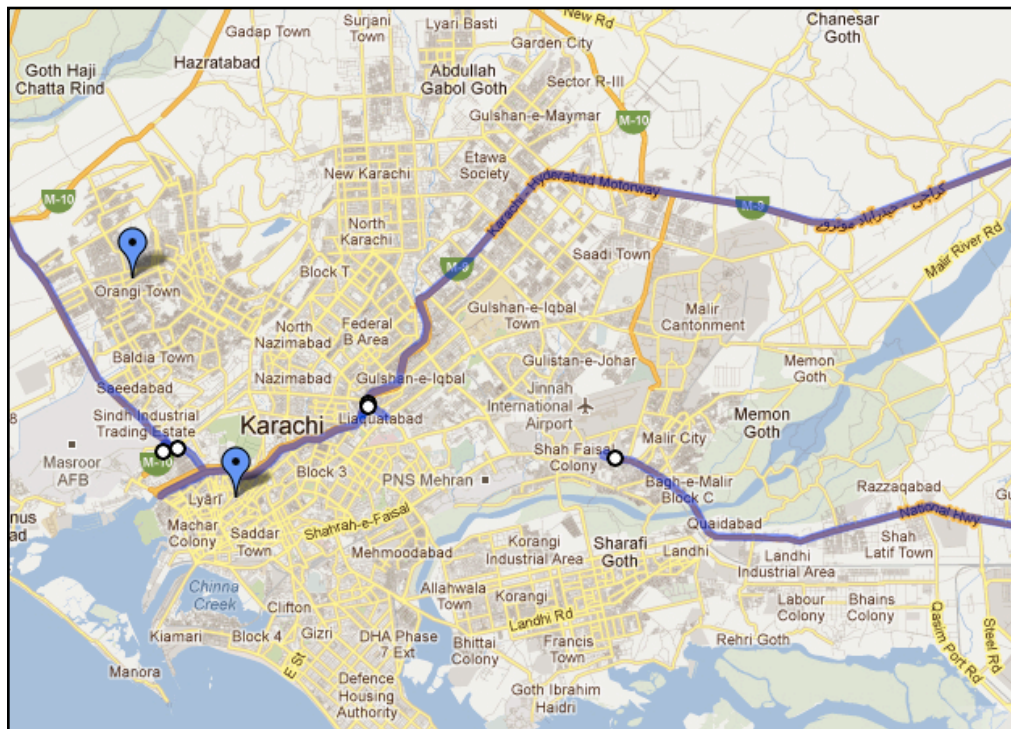


Fig. 3: Only 3 highways connect Karachi to the rest of Pakistan. The general perception in the city is that the Pathans, who are heavily represented in the transport sector, control the routes in and out of Karachi. Source: Google Maps.

- Saddar, the heart of Karachi and the old city, is frequently a victim of violence in the city, especially after 9/11. Many embassies, including the U.S. Consulate, are located in Saddar, along with the Sindh High Court and foreign 5-star hotels like the Sheraton.

- Drive-by shootings by motorcycle riders with helmets and guns are the most common causes of murders, especially in target killings. Sectarian murders usually take place outside mosques and *imambargahs*, while the victim is exiting after prayers. If Shia professionals are being targeted, they usually get killed on their way to or from work on the street. In fact, many people in the city feel that their commute is more dangerous than the place they live in. For example, an Orangi resident commented in 2008 that while he feels safe in his area, his commute through the Pathan-dominated Qasba Colony puts him on edge (*Newsline archives*).
- Main roads, like the M.A. Jinnah Rd., and intersections, like the Guru Mandir one, attract a lot of violence possibly because of the popularity of motorbike murders.
- From the dataset, residents from some parts of the city appear to be responsible for violence in the city, while others are victims. For example, in many of the news articles, people often comment that the mobs came from roads leading out of Lyari or Sohrab Goth. Perhaps some of these comments are more governed by negative perceptions of certain areas and *katchi abadis* than accuracy. A further exploration of spatial interactions between different parts of the city is useful in understanding how violence migrates across urban space.
- University campuses appear to be sites of contention again in 2010 after wave of campus violence in the 1980s. There have been clashes between political and ethnic groups at Karachi University, the Aga Khan University, and the Federal Urdu University of Arts, Science, and

Technology (FUUAST). One hopes that this is not the start of yet another cycle of destructive political violence for Karachi.

This chapter laid out the history of violence in Karachi between 1980 and 2010 and pointed out that social, political, economic, and institutional factors were the biggest sources of violence in the city during this period. The next chapter will look at violence in Orangi and Lyari, two towns in Karachi, and examine the relationship between violence and socio-spatial capital through the analysis of urban form and mediating institutions of civic structures, like the Orangi Pilot Project.

Chapter 5. The Orangi Pilot Project: Socio-spatial Capital and Urban Violence

Clearly there are two apparently irreconcilable approaches to project execution [in Orangi]. One, open-ended, exploratory, and evolutionary with emphasis on sociological particularities, unconstrained by time and cost. The other, target-oriented, systematic, with a professional and technical focus, constrained by time and costs.

-Nicholas Houghton, Chief Technical Advisor, UNCHS, Karachi, 1982

Karachi's economic potential is greatly checked by chronic violence, unfettered population growth, and uncontrolled urban sprawl. *Katchi abadis* crowd the city, and many residents live in settlements with no formal access to water, health, education, and sanitation services, subject to the violent whims of the mafias, gangs, and political parties who control these resources. What happens to the level of violence in unplanned areas when they receive urban services? Is violence in a town connected to its urban form? Do social networks in a town affect violence? These are some of the questions this chapter will explore, using the examples of Orangi and Lyari.

The first section provides a brief socioeconomic profile of Orangi, including the types of violence the area has experienced. The second part will look at the Orangi Pilot Project (OPP), which has helped residents build low-cost sanitation facilities. The next section will investigate the OPP's role in reducing violence in the area. The fourth part uses Lyari as a comparison to Orangi and will describe its socioeconomic and violence profile. Section 5.5 asks why the OPP exists in Orangi and not Lyari through a discussion of civic structures and social capital in the area. The last part moves into the theoretical realm and applies concepts from the resilience literature review from Chapter 2 to Orangi and Lyari.

5.1 Orangi

Located in the northwest part of the city near the M-10, Orangi has been the destination of many immigrant populations since it formed in the peripheries of 1960s Karachi (Figure 10). While it is often referred to as a slum, especially when compared to Dharavi in Mumbai, it is actually a low-income settlement that is considered to be 85% *katchi abadi*. 1.2 million people live in Orangi, and it is often referred to as a “mini-Karachi” because of its heterogeneous composition. The dominant ethnic groups, who often live in colonies segregated by ethnicity, are the *Muhajirs*, Pashtuns, Balochis, Punjabis, Sindhis, and the Bohras. The town has a mixture of income classes, including lower middle class, and many residents work as transporters (*Dawn* archives; Hasan 2007).

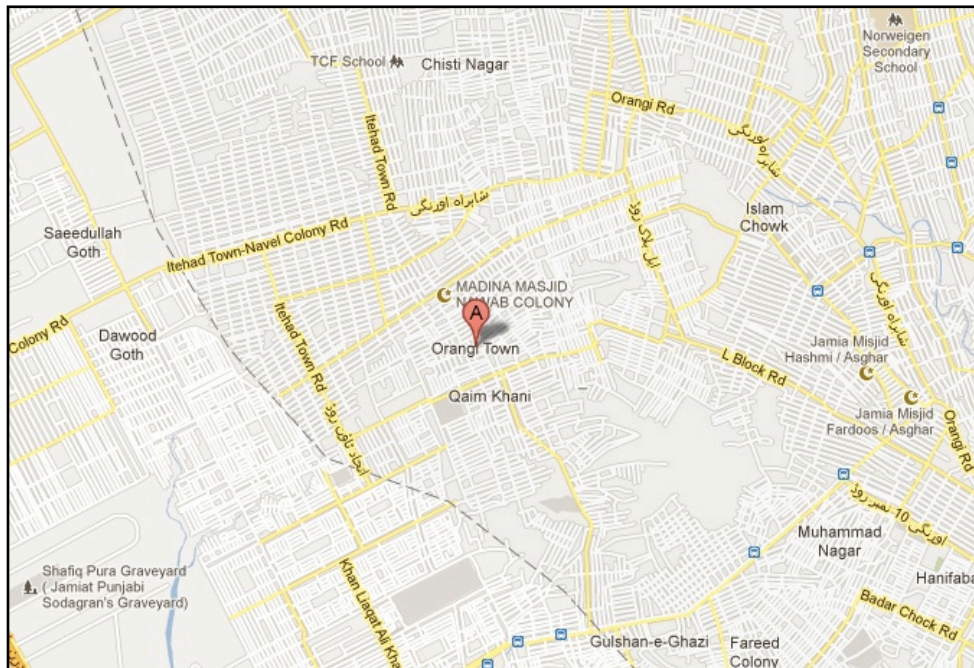


Fig. 10: Rough layout of settlements in Orangi Town. Most of the houses are organized around straight lanes. The M-10 highway leading into Balochistan (not pictured here) lies to the west of Orangi. The town’s proximity to the M-10 is an attraction to many of the residents, who work as transporters. Source: Google Maps.

Figures 11 and 12 provide a look at the texture of the urban fabric in Orangi. Most of the houses are organized on either side of straight lanes, and consist of single- or double-storey buildings. Around 100,000 of these units are informally built (Hasan 2007). Because it is located away from the old city, its urban density is low compared to heavily built-up areas in the center of the city, like Saddar and Lyari. Since it is classified as a *katchi abadi*, the Karachi Metropolitan Corporation (KMC) does not extend urban services to the area. Consequently, before the emergence of the OPP in 1980, the area suffered from what Dr. Akhtar Hameed Khan called “medieval sanitation” (*Dawn* archives).

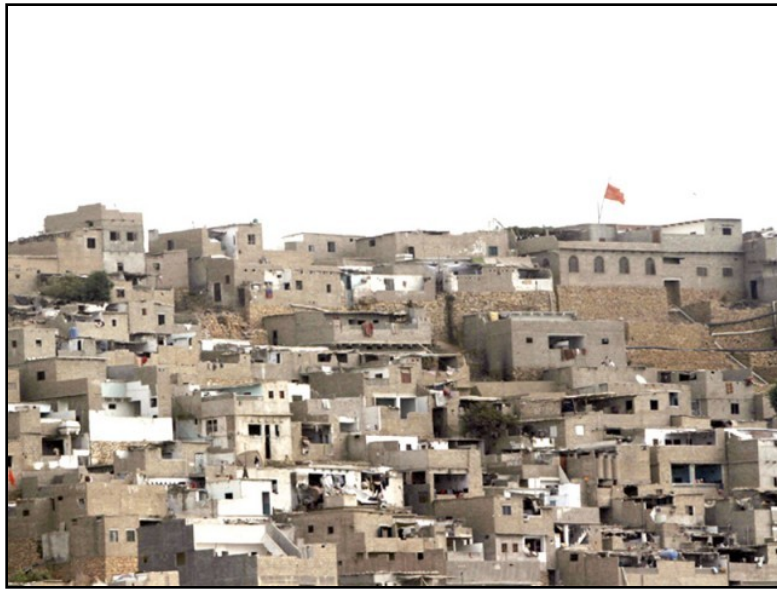


Fig. 11: Layout of houses in Orangi, spread out over a natural slope on the peripheries of the old city of Karachi. Source: Tribune.



Fig. 12: A lane in Orangi Town. Houses in the area are organized around lanes, making the lane an important unit of analysis in understanding violence and infrastructure development in the settlement. Source: Revista Amauta.

Because of diverse ethnicities, and consequently divided political loyalties in Orangi, the area has often been the epicenter of ethnic and political violence. For example, the Bushra Zaidi riots in 1985 and ensuing ethnic wars wrecked the district in the mid-1980s, forcing residents to flee to other parts of the city (*Dawn* archives). Figures 13 and 14 show the human costs of damage in Orangi and the distribution of the types of violence from 1980 to 2010. Figure 13, which looks very similar to Karachi's Figure 7 with its peaks in 1985, 1995, and 2010, is reflective of Orangi's status as a microcosm of Karachi. Figure 14, which shows the distribution of violence in Orangi, is also similar to the proportions of Karachi's Figure 7. However, compared to the city of Karachi, Orangi experiences less economic violence and more institutional violence, as expected from its struggles with the police and urban servicing agencies in its quest for access to formal amenities.

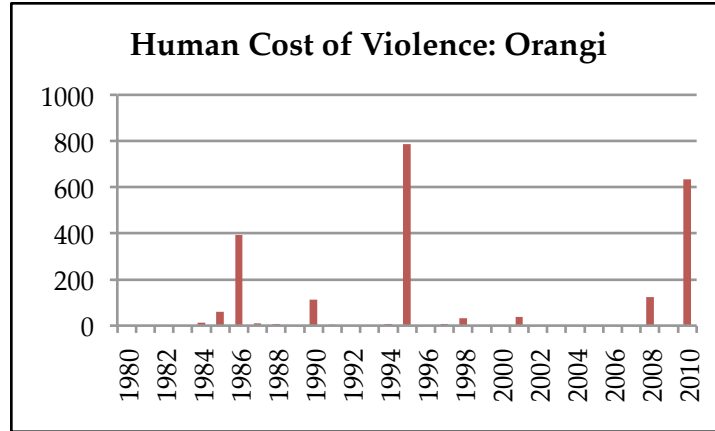


Fig. 13: Human cost of violence in Orangi from 1980 to 2010. The peaks and troughs appear similar to the Karachi graph, which reinforces Orangi’s ethnic diversity.

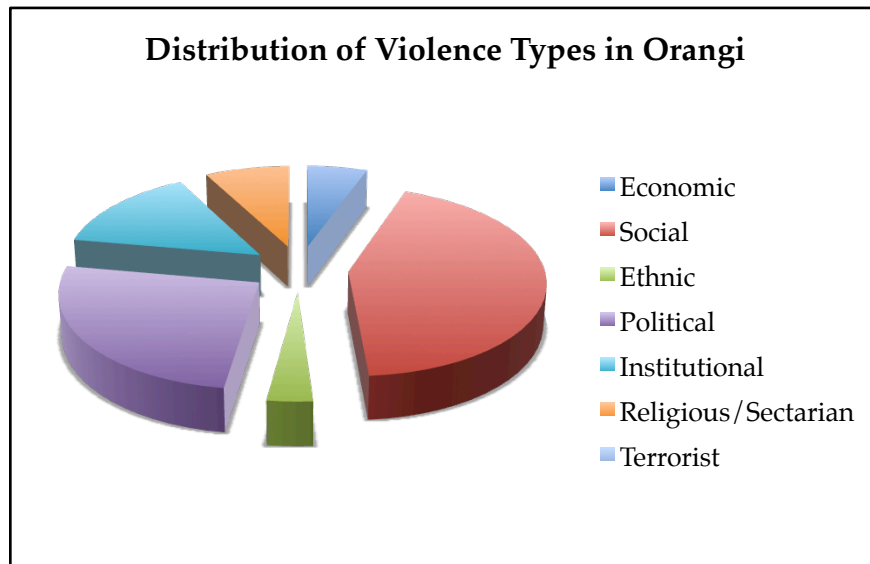


Fig. 14: Distribution of violence in Orangi from 1980 to 2010. Social and political factors are most responsible for violence in the area.

Another feature of the nature of violence in Orangi is its vulnerability to exogenous shocks. Some reports suggest that Orangi might be a source of violence, citing its possible status as a weapons warehouse for militant groups because of its proximity to the M-10, which leads all the way up to the Afghan

border through the N-25 (*Newsline* archives). However, with the decline of purely ethnic violence in the city and the advent of the OPP, many news articles suggest that it has become a fairly safe area. However, political clashes which erupt in other parts of the city do spread to Orangi because of its heterogeneous composition (although many residents support the MQM) (*Dawn* archives; Hasan 2007).

The next section details how the OPP brought low-cost sanitation to Orangi, one of the largest and most violent *katchi abadis* in the city, and in the process, transformed its socioeconomic and built environment.

5.2 Overview of the OPP

The OPP was started by Dr. Akhtar Hameed Khan in 1980 when the Bank of Credit and Commerce International (BCCI)¹⁰ was exploring development projects in Orangi. Dr. Khan, a Pakistani social scientist, started his field research in the area by driving around Orangi in a battered jeep and talking to the residents about their everyday concerns. From his interviews with the residents emerged a general plan to provide low-cost sanitation that focused entirely on community ownership of space devoid of foreign intervention (Hasan 2007; Khan 1996; Barmazel 2005).

Dr. Khan recognized that many of the residents were already in the process of building sewer lines but were either not placing the pipes correctly or were building them in opposite directions in the same lane as a result of tensions between neighbours. He came up with four general goals for the OPP, which

¹⁰ The BCCI Foundation is now known as INFAQ.

replaced the targets and timelines present in most development projects. He wanted residents to claim ownership of their space instead of expecting the government to provide services¹¹ and organize themselves by lanes, working through community tensions. The OPP also intended to provide technical assistance to residents and pursue low-cost infrastructure for increased community participation (Hasan 2007).

The OPP process is simple. Each lane (around 20-40 houses) has to organize and elect a lane manager in charge of collecting funds. The lanes then apply to the OPP for technical and financial assistance, and OPP representatives organize and supervise the work of the residents (Hasan 2007). Forcing lanes to organize without OPP help and apply to the low-cost sanitation program increased the residents' sustained commitment to constructing sewer lines (Barmazel 2005). Hasan (2007) reports that the ratio of the people's investment in low-cost sanitation in Orangi to the investment of the OPP-RTI is 1:18.2.

While the OPP champions self-help activities of *katchi abadi* residents, it does not want to alienate or replace the state. The organization works on an internal/external concept, where Orangi residents are responsible only for the construction of latrines in their homes and secondary sewer lines in their lanes leading to natural drains. The OPP would ideally like the government (in the form of SKAA, KMC, and KWSB) to step in and assume responsibility for the external primary lines and waste treatment plants. While the Sindh *Katchi Abadi* Authorities (SKAA) has been receptive to OPP's involvement in Orangi and the

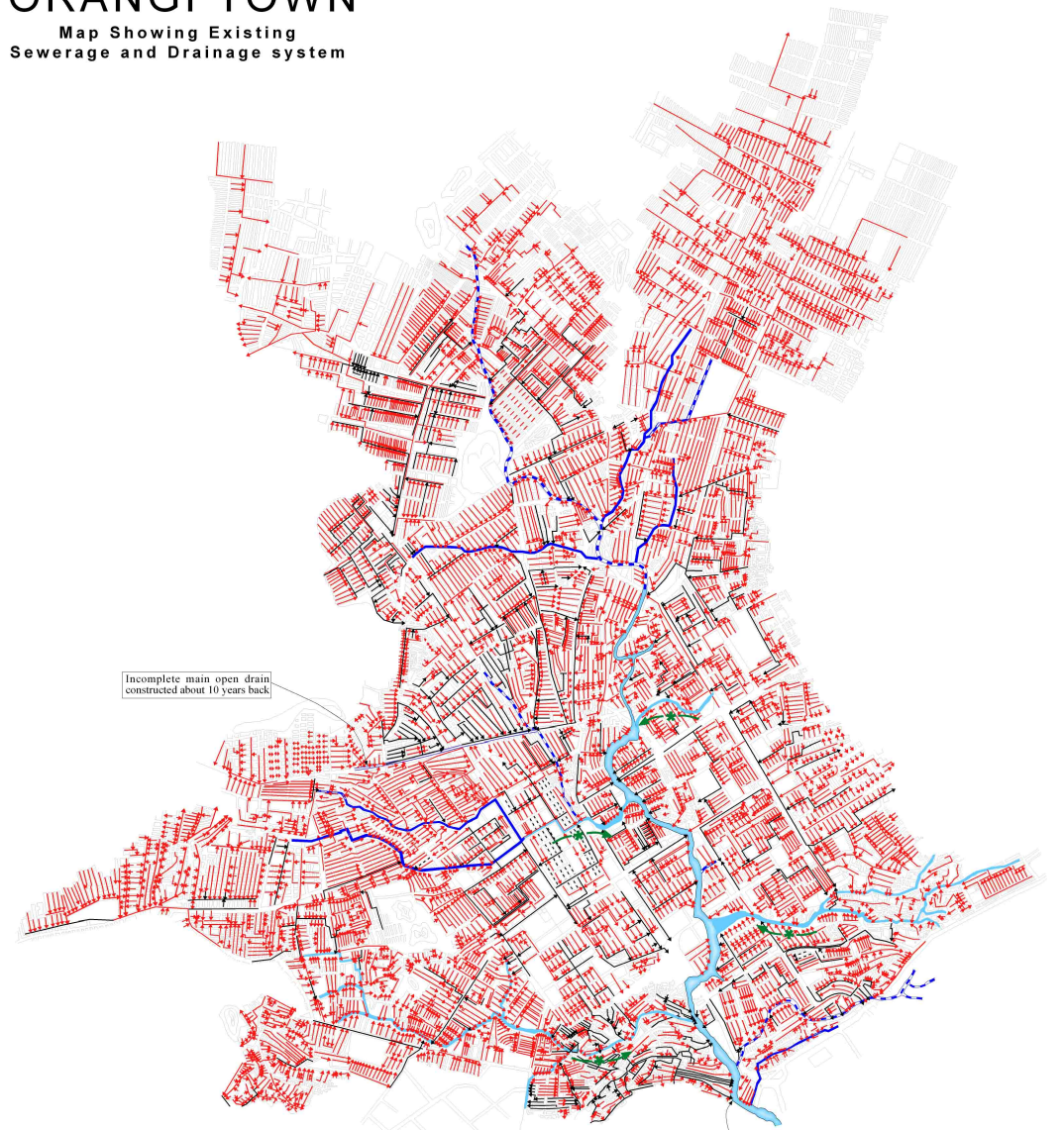
¹¹ Hasan (2007) notes that it takes 15-20 years for *katchi abadi* residents to get access to formal state services.

other informal settlements in Karachi, the KMC and the Karachi Water and Sewerage Board (KWSB) have ignored the OPP's contributions (Hasan 2007).

In 1982, the OPP received a proposal from the United Nations Center for Human Settlements (UNCHS), which became an inadvertent test for its effectiveness. The UNCHS offered to provide technical assistance to the OPP in the form of a seven-year partnership funded by the BCCI. However, the OPP's bottom-up working style and the UNCHS's more formal approach to development did not work well together, and Orangi was subsequently divided in two – in one area, the OPP continued their work, and in the other, the Community Development Project (CDP) from UNCHS started building their own sewer lines. At the end of the seven-year period, there was a clear winner – the CDP spent \$625,000 to build 36 sewer lines while the OPP had constructed more than 4,000 sewer lines at one-third of the cost. The CDP area was then returned to the OPP (Barmazel 2005). As of August 2011, the OPP has built 90% of sewer lines in Orangi, as shown in Figure 15 (OPP-RTI).

ORANGI TOWN

Map Showing Existing Sewerage and Drainage system



Statistical Data June-2006

| | |
|----------|----------|
| Mohallas | 113 |
| Lanes | 7,615 |
| Houses | 1,08,301 |

Internal Development by People

| | |
|--------------------|---------------|
| Lane sewers | 6567 (86.23%) |
| Sec sewers | 454 |
| Sanitary Latrines | 98795 |
| Peoples investment | 98.07 million |

External Development by Govt.

| | |
|----------------------|------------------|
| Trunks | 139 (170468 rft) |
| Nala Development -11 | (52,611 rft) |
| Govt. investment Rs. | 14,851 million |

Orangi main nala (design in progress) joins the Lyari Nadi and disposes into the sea. Survey has been completed, design is underway. Mean while KW&SB accepts plans to connect this, thru intake chambers, to the Lyari interceptor which is connected to the Mauri pur sewage treatment plant.

| REFERENCES | |
|------------------|---|
| | Sewerage Line |
| | Drain |
| NALA DEVELOPMENT | |
| | Completed as box trunk |
| | In Progress |
| | Branch Nala |
| | Main Nala |
| | PC-I completed-under process for approval |


OPP-RTI
Orangi Pilot Project
Research and Training Institute
 Plot No. ST-4 Sector - 5/A, Qasba Colony,
 Manghopir Road Karachi. Ph: 6652297-6658021,
 Fax: 021-6699347, E-mail: opprti@cyber.net.pk
 Website: oppinstitutions.org

| | |
|---------------------|-------|
| Surveyed by OPP-RTI | NORTH |
| DATED June, 2006 | |

Fig. 15: Sewer lines built in Orangi by the OPP from 1980 to 2006. Each red line represents a resident-built sewer line. Source: OPP-RTI.

Despite interference from UNCHS, the OPP continued to flourish. Its rate of construction of sewer lines caught its momentum around the mid-1980s, around the time ethnic riots broke out in Orangi (Hasan 1995; Khan 1996). In 1998, the OPP expanded into three separate entities – the OPP-RTI, the Orangi Charitable Trust (OCT), and the Karachi Health and Social Development Agency (KHASDA) in order to better address the evolving credit, health, and community development needs of Orangi residents once sanitation problems were taken care of (Hasan 2007). Figure 16 shows the general growth of the OPP's assets from 1989 to 2005.

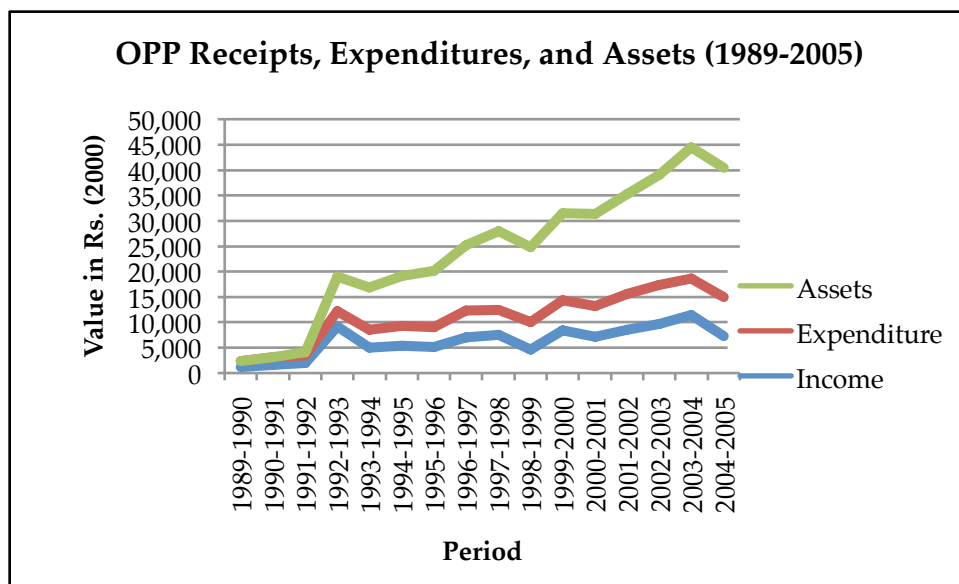


Fig. 16: Adapted from Hasan (2007), this graph shows how assets, expenditure, and income of the OPP have changed over time.

Besides increasing its services in Orangi, the OPP had also started mapping and surveying other *katchi abadis* in Karachi to prepare maps of water and sewer line connections for each area. In 1994, the Youth Training Programme

was set up in Orangi to provide mapping, surveying, and community mobilization skills to help the OPP in its survey of the informal settlements in Karachi. So far about 60% (364) of all *katchi abadis* in Karachi have been surveyed (Hasan 2007).

Both Hasan (2007) and Zaidi (2001) describe the incredible impact of low-cost sanitation on Orangi's built environment and social space. For the first time, lanes were clear of sewage and rubbish and children could play in the streets. Women could move more easily outside, and Zaidi (2001) notes that perhaps marriage prospects for women increased with expanded mobility. Property values increased by 30%, which prompted many residents to formalize their property rights, the infant mortality rate dramatically dropped, and better health for all residents translated into more stable livelihoods. The residents recognized their success in building their own sewer lines, and expanded upon their self-help capabilities by building private schools and clinics in the area, which outnumber state facilities. The only losers in Orangi were the doctors, who saw their steady stream of patients dwindling as a result of the OPP (Hasan 2007).

The success of the low-cost sanitation project has made the OPP strategy popular in the rest of Pakistan. Although it has been replicated 284 times in 11 towns in Pakistan, Orangi remains the most successful case. In other areas, replication attempts have failed for various reasons, from the lack of cohesion in a lane to different political parties hijacking OPP proposals for political gain at various stages of the construction process (Hasan 2007).

In Orangi, the OPP is still struggling to formulate the best strategy for working with government. The internal/external concept is ideal in leveraging both the resources of the community and the state but has not found much success because of the ineffectiveness of mediating state agencies like the KWSB and the KMC. The KWSB is in debt to the Asian Development Bank for \$7 billion and has yet to start servicing its loan, which is currently being processed at the provincial government level. While the OPP has taught its residents to closely work with and monitor the efforts of KMC engineers, the residents complain of shoddy workmanship on the part of KMC (Hasan 1997; Hasan 2007). From its recent Quarterly Reports, it is evident that the OPP has moved from attempting to work with government to empowering residents to lobby the state for services.

At the national level, however, OPP-RTI has found success in helping the country plan its sanitation policies. In addition to preparing maps for the different union councils and informal settlements in Karachi, it was also invited by the government to help plan the 2006 National Sanitation Policy, which the OPP-RTI formulated at one-third the cost of other private sector plans (Hasan 2007).

In a diverse town torn by different types of ethnic, social, and institutional violence, the OPP has played the role of a civic structure bridging ethnic and political groups, and increasing interethnic engagement. Through its relatively hands-off lane organization policy, it has encouraged residents to independently overcome underlying tensions and unite for a larger cause, building horizontal social capital. Its internal/external concept is evidence that the OPP does not neglect vertical social capital, linking Orangi to the state or to other parts of

Karachi. In fact, its involvement in mapping other informal settlements and employing the youth of Orangi in this project is one example of how the OPP has forged links between the area and the larger city of Karachi.

The next section asks the following question: with all the horizontal and vertical social capital the OPP has constructed in Orangi, has there been any impact on the level of violence in the area?

5.3 OPP Effect on Violence in Orangi?

It is impossible to escape violence in Karachi. Brass (2005)'s political "riot machines" cause widespread damage while robbers and armed gangs engage in random shooting sprees. Can a civic structure like the OPP make a difference in this chaotic landscape?

Barmazel (2005) points out that it is difficult to measure the effects of the OPP on violence because one needs to count the number of violent events that did not occur as a result of the organization – an impossibility. However, both Barmazel (2005) and Khan (1996) describe two events in Orangi, which emphasize that while the OPP cannot prevent violence from affecting the area, it can mitigate the effects of these exogenous shocks and prevent further conflicts. This prevention of further conflicts is particularly important in Karachi because violence in the city is like a game of Dominoes – one instance of conflict can easily spiral into a city-wide riot in a matter of hours.

Dr. Khan reminisces about the Bushra Zaidi riots in 1985 in Orangi, which devastated the area. He writes about his fear that ethnic and political loyalties would crush the fragile connections the OPP had constructed in five years. While

the OPP could not prevent ethnic wars from taking place, it could use its community connections and technical assistance to help the people focus on reconstruction and not revenge. The OPP started re-building houses razed by the fires and helped people get compensation for their material losses. The OPP staff, along with lane managers and health workers, helped calm the anti-Pathan frenzy in a largely *Muhajir* area, and reminded residents that Orangi was an urban industrial community dependent on symbiotic relationships between different groups. Many people who had been involved with OPP's efforts brought the Pathans, who had fled Orangi because of the riots, back into their homes and schools (Khan 1996).

A similar incident occurred again in 1990 when a group of armed *Muhajirs* from outside Orangi came into the area and set fire to 68 houses in Baloch Colony because of some event that had transpired miles away in Hyderabad. Although the conflagration did not spark ethnic wars, many Balochis fled Orangi because they feared for their lives, and attempted to get Balochis outside of Orangi to take revenge on *Muhajirs* in Orangi. The OPP, however, stepped in and asked the Bihari neighbours of the Balochis to escort them back into the neighbourhood and protect them from any further attacks. Simultaneously, they engaged in reconstruction efforts in order to divert the attention away from revenge to rebuilding, preventing any further escalation of ethnic tensions.

These two examples show that the social networks cultivated by the OPP and the trust the residents have in the organization have had an effect in minimizing the effects of exogenous shocks. The next section will look at socio-spatial capital in Lyari, another violent town in Karachi.

5.4 Comparison: Lyari and the Rest of the City

Lyari is often called the soul of Karachi (*Dawn* archives). It is located in the center of the old city, near the port and Saddar, and in the 1960s and 1970s, it enjoyed a vibrant music and arts scene (Yusuf 2008b). Unfortunately, contemporary Lyari is branded as the haven of warring gangs affiliated with the PPP and has become an informal “no-go” area (*Dawn* archives).

Figures 17 through 20 show Lyari’s location in the heart of the city and downtown Karachi, and highlight its crumbling built environment. The town, which is the smallest area-wise in Karachi, is squished in between the Lyari River and busy highways that service the port. Lyari is cramped and densely built-up, with dark, narrow, curving roads, perfect for gang shootouts and the hiding of weapons and drug caches (*Dawn* archives). Decades of violence caused by gang wars have prevented development agencies and security forces from stepping into Lyari, and the results are haphazard construction of multiple floors on existing buildings and weak links to urban services. Figure 20 shows Lyari’s sewer and drain map prepared by the OPP. The network of sewer line coverage in Lyari compared to Orangi (Figure 15) is evidence of poor water and sanitation facilities in the town.

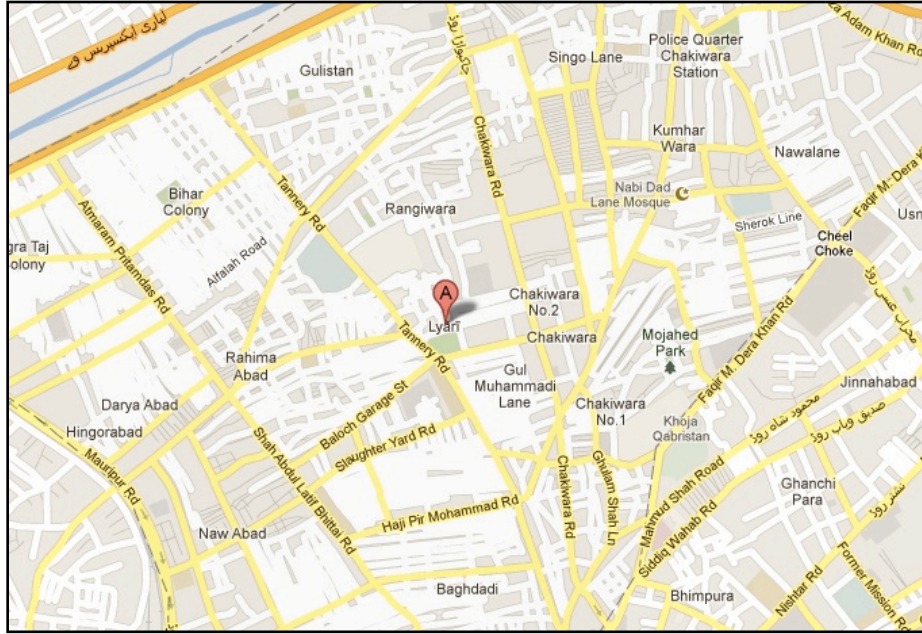


Fig. 17: Location of Lyari in the heart of old Karachi. In terms of area, Lyari is the smallest town in Karachi. Compared to Orangi, Lyari's buildings are more densely packed. Source: Google Maps.



Fig. 18: Poor living conditions in Lyari. Compared to Orangi, which is mostly composed of one- to two-storey houses, Lyari has multi-storey apartment buildings, with floors being continually added on. Source: Time Magazine.



Fig. 19: Urban fabric of Lyari - narrow streets and alleys framed by decaying, dilapidated buildings. Source: Google Images.

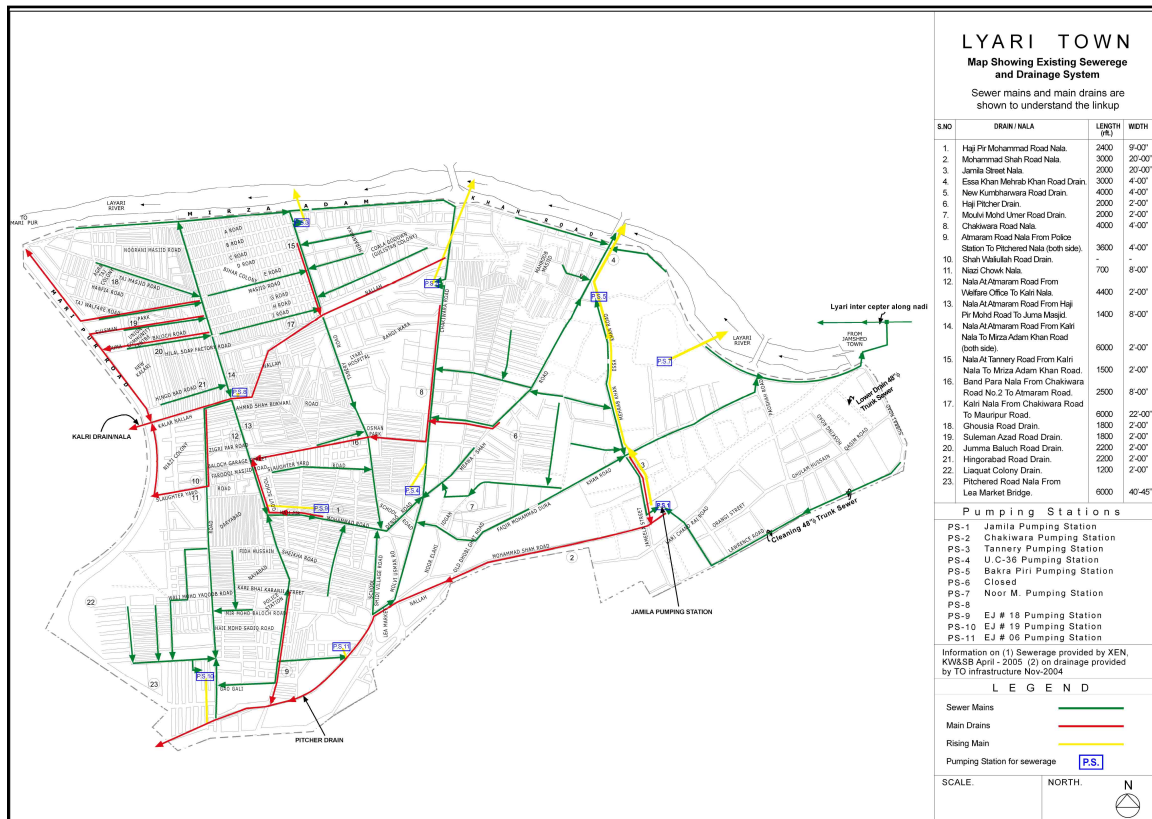


Fig. 20: Existing sewer and drainage system in Lyari. Compared to the Orangi sewer map (Fig. 13), the town's sewer line coverage is not extensive. Many of the areas without sewer lines are densely built-up with narrow, curving roads, which makes it more difficult and expensive to build sewer lines. Source: OPP-RTI.

One million people live in Lyari, and most of them are Balochis (*Dawn* archives). Unlike Orangi, which is a more modern, heterogeneous immigrant community, people in Lyari have known one another for years. The town is composed of mostly low-income classes and unemployment is rampant. Many people find work in physical labour industries like fishing and shipbuilding (Naqvi 2010). *Dawn* interviews with Lyari residents and political representatives dispel some of the perceptions of Lyari as a town filled with PPP gang members intent on destroying Karachi. According to the residents, unemployment and urban redevelopment are their most prominent concerns, not the gangs. They point to abandoned schools and hospitals in Lyari and deplore the state's sporadic attempts to "re-build" Lyari by constructing more empty buildings during elections to secure votes (*Dawn* archives). Conscious state neglect of Lyari, which ensures a constant supply of disenchanting and unemployed young men who eventually become thugs, is beneficial for political parties. Naqvi (2010) eloquently rephrases Brass (2005)'s "political riot machines," when she writes that "Lyari is the servants' quarter for the tribal mentality holders of power, the rulers of Pakistan."

Violence in Lyari is primarily economic. *Dawn* articles, Naqvi (2010), and the Lyari dataset highlight that many sources of economic violence in Karachi originate in Lyari. For example, besides the infamous Arshad Pappu and the Rehman Dakait gangs, the town is also home to numerous members of the land and water mafia.

Figures 21 and 22 show the levels and distribution of violence in Lyari from 1980 to 2010. The graph and chart are very different from Orangi's and

Karachi’s visual representations of violence. For example, Lyari does not have the peaks in 1985 and 1995 caused by ethnic and political violence, probably because most of the MQM-related conflict was localized in the northern part of the city. The distribution of violence in Figure 22 emphasizes the economic nature of violence in the area, arising from gang wars and drug and weapons trafficking. Since Lyari is ethnically (and politically) more homogeneous, the fault lines tend to be economic and gang-related.

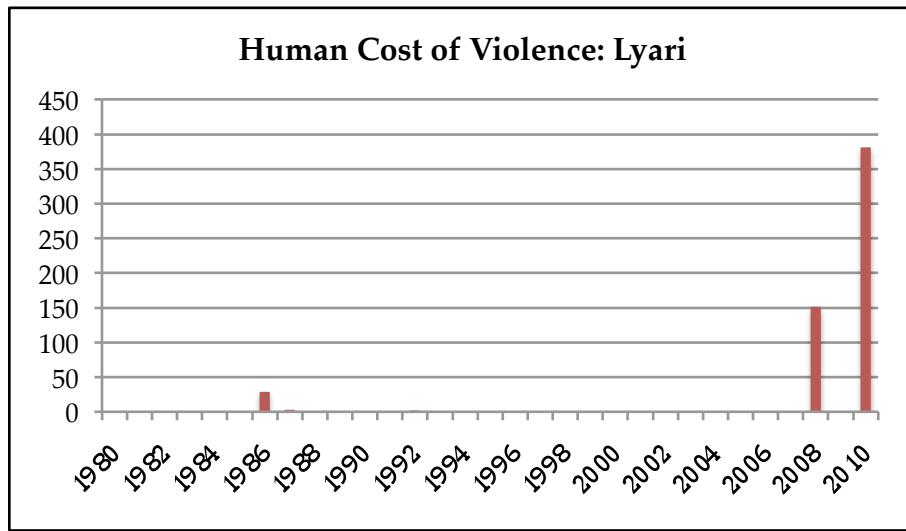


Fig. 21: Human cost of violence in Lyari from 1980 to 2010. The differences between this graph and the ones for Karachi and Orangi are extensive. Lyari does not have the characteristic peaks in 1985 and 1996 that correspond to the massive ethnic and political violence during those years.

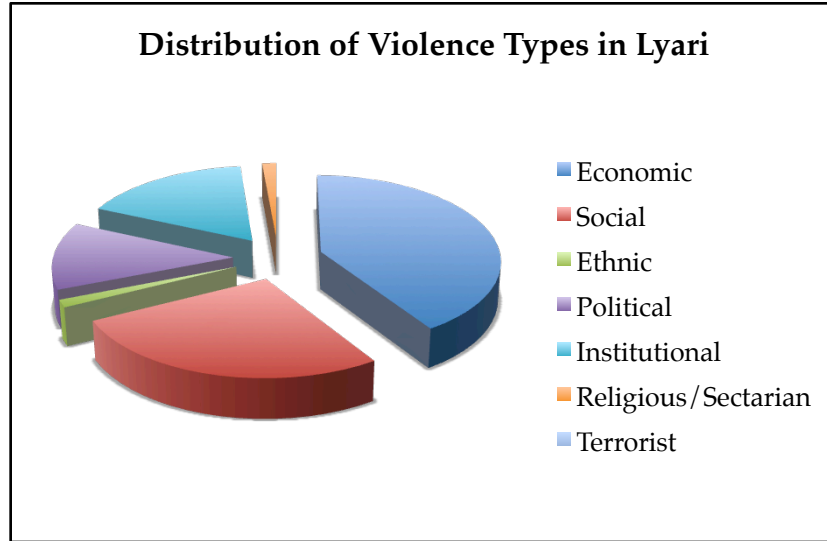


Fig. 22: *Distribution of violence in Lyari. Economic and social violence dominate the town, which correspond to the qualitative evidence that gang-related violence is prevalent.*

In order to ensure that the Lyari graphs are not a fluke, Figures 23 and 24 highlight the levels and distribution of violence in other parts of Karachi, omitting Orangi and Lyari. These figures are consistent with the city's and Orangi's graphs, where social violence forms the biggest source of conflict, and the characteristic peaks appear in 1985 and 1995. Further research on the violence at the sub-city level in Karachi can examine the level and type of violence for each town in Karachi, similar to the OPP concept of giving each neighbourhood drainage and water maps. This vein of analysis can point out whether violence in an area is endogenous or exogenous, and can provide a deeper understanding of how each town interacts with another socially and spatially for strategic violence reduction policies.

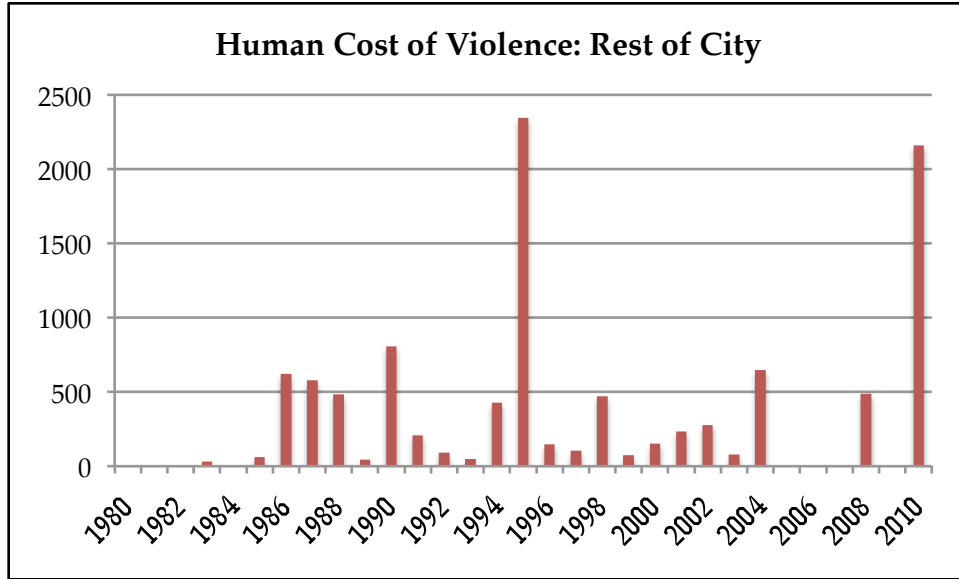


Fig. 23: Human cost of violence in the rest of Karachi, omitting Orangi and Lyari. This is a test to see if the Lyari graphs are a fluke. The graph for the rest of Karachi looks very similar to the Karachi and Orangi graphs.

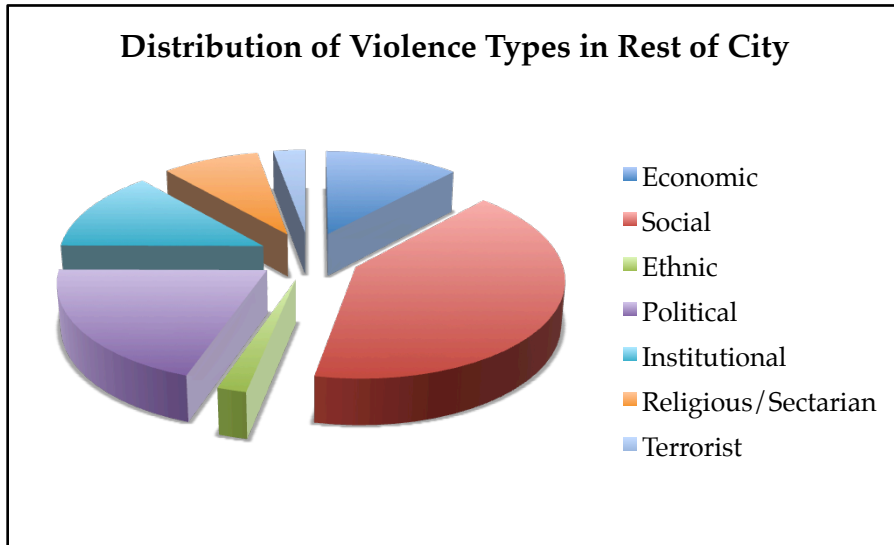


Fig. 24: The distribution of violence in the rest of Karachi, leaving out Orangi and Lyari. The distribution of violence in the rest of the city is similar to the distribution for the whole of Karachi and Orangi.

5.5 Civic Structures and Social Capital in Lyari

Social capital in Lyari is organized around gang affiliation. Even if residents do not want to belong to a particular gang or political party, they are sometimes forced to join a group to seek protection in times of high violence (*Dawn* archives). The only civic structure rivaling the OPP in Lyari is the Lyari Peace Committee (LPC), started by Rehman Dakait (*Dawn* archives, *Newsline* archives). Opinions on the LPC are conflicted. On one hand, supporters of the LPC point to many urban interventions the committee has implemented in cleaning up the built environment of Lyari and to the donations of the Dakait family during Eid. On the other hand, MQM supporters call the LPC another extension of the PPP. Either case presents the same conclusion for social capital in Lyari – negative social capital organized around gang or political affiliations leaves no room at the top for a civic structure like the OPP. To re-visit Varshney’s (2002) model, while the OPP boosts interethnic engagement between different groups, the negative social capital in Lyari increases intra-group engagement with no bridging institution. This negative social capital associated with gangs also effectively prevents any vertical social capital between residents of Lyari, other parts of Karachi, and the state.

Despite the overwhelming presence of negative social capital associated with gangs in the town, there are pockets of positive social capital. These social networks mirror the urban form of Lyari – they are hidden, exist in corners, and are tightly grouped. *Dawn* and *Newsline* report the existence of street schools (Figure 25) and women’s cooperatives in Lyari, similar to efforts in Orangi. However, because of the general poverty of the town and the suffocating

negative social capital of the gangs, these positive social networks often consist of less than five people, hidden from the mainstream (*Dawn archives, Newswire archives*).



Fig. 25: One of the street schools in Lyari. Positive social capital in Lyari exists in pockets and has not scaled up to the OPP level. Source: Flickr.

The differences in urban form between Orangi and Lyari also affect the types of existing social capital and the entrance of positive civic structures like the OPP. While Orangi is largely an informal settlement, it is still organized by lanes, and does not have the high urban density Lyari has. The lanes in Orangi play a large role in the effectiveness of the OPP - the straight lanes provide space for sewer lines to be easily constructed by the residents, and the lane naturally transforms into an organizational unit.

Further, the topography of Orangi is more conducive to sewer line construction than that of Lyari. As Zaidi (2001) writes, Orangi lies on a natural slope, which makes it cheaper to build sewer lines because no pumping station is needed. Lyari, on the other hand, lies on relatively flat land near the port, and is densely built-up, which would make sewer lines expensive and difficult to build. These spatial differences also make it easier for the residents of Orangi to adopt the OPP's internal/external concept compared to the people living in Lyari.

Dr. Khan (1996) writes that people in Orangi were already laying down some sewer lines before the OPP entered town. One can contrast the initiative of Orangi residents to the people of Lyari. Were they also trying to build sewer lines and water lines without state intervention? While no examples exist of community-built sewer lines in Lyari, one can examine the spatial differences between Orangi and Lyari to determine if the urban form is conducive to self-help infrastructure projects. Perhaps one of the motivations for Orangi residents to build their own sewer lines is the availability of space and straight roads outside their houses. Where would Lyari residents build sewer lines? The roads are narrow and curvy, and often lead to dead-ends. Lyari is also sandwiched between the port and national highways, which may make building a sewer line to a natural drain difficult.

Constant violence in the area and the lack of a cohesive organizational unit would have also hampered community initiatives to build sewer lines. Compared to Orangi, Lyari is a source of crime in Karachi, not a victim. News articles report regular gun battles after sunset in the area, and many schools and hospitals in town have been abandoned simply because people are too afraid to

go to work (*Dawn* archives, *Newsline* archives). In such a perpetually violent environment, how can someone be comfortable building a sewer line outside for hours? Further, the haphazard construction of housing and shacks in Lyari, along with the general vertical expansion of houses in the area, make finding a single organizational unit difficult. Orangi has straight lanes but can Lyari residents organize around their curvy streets?

5.6 Re-Visiting Resilience Theory: Orangi and Lyari

This section applies the ideas of resilience from Chapter 2 to Orangi and Lyari. In a chronically violent landscape, Orangi residents have managed to overcome ethnic and political differences to unite around infrastructure provision projects organized by the OPP. As a result, living standards in the area have improved, and while the OPP cannot prevent violence, it has definitely played a part in mitigating the effects of exogenous shocks on the community. It is a positive example of urban resilience because, to use Olson's (2007) definition of resilience, the residents of Orangi have found innovative ways of coping and moving forward with their lives, while adapting to the perennially changing landscape of violence in Karachi.

If Orangi is resilient, what about Lyari? Perhaps residents in Lyari are more resilient than people in Orangi because they have bigger battles – endogenous violence, poor urban form, conscious state neglect, and overt political manipulation. They may not have a version of the OPP or regular access to water and sanitation services but residents continue to survive in the same area and make incremental improvements to their environment and social space

by building houses or by running women's cooperatives and street schools. Holling's (1973) definition of resilience can be invoked here to demonstrate how Lyari residents have the capacity to withstand shocks and still maintain their lives.

The examples of Orangi and Lyari as resilient spaces emphasize, once again, the problem of using stability concepts to examine chronic phenomenon. How does categorizing Orangi and Lyari as resilient spaces advance the study of chronic violence? In declaring both spaces resilient, positive projects like the OPP stand out less in a comparative analysis of Orangi and Lyari. If a town with the OPP and a town with gangs and the LPC are both considered resilient against violence, what is the purpose of the concept of urban resilience? If Lyari and Orangi are both resilient against chronic violence, does this mean no violence reduction or prevention strategies are necessary in these areas? These are problems in moving forward with using a concept like resilience.

Yusuf (2011a) refers to the problems of applying the term 'resilience' to Karachi. She describes the concept as a word-of-last-resort when one is out of options in describing a perennially violent city. Politicians like the concept because it allows them to sidestep any responsibility for causing violence and for the failure of police reform and urban development in the city. For citizens, celebrating their resilience is the only positive spin on the wide-range of coping mechanisms one has to formulate and endure in a violent city with a fragile state. Yusuf (2011b) writes that for Karachi residents, "resilience... is more akin to resignation to one's fate... [and] is a euphemism for a pervasive lack of faith in the state." Using the idea of resilience cannot push the analysis of violence into

finding pathways to peace, or at the very least, less violence. The next section will identify one possible alternative for the study of chronic violence based on the different approaches to violence discussed in Chapter 1.

Chapter 6. Reflections on Socio-Spatial Resilience in Cities with Chronic Conflict

City soul is located in the architecture of the space between people and is predicated by congruent aspirations and social commonality. ... An ugly city speaks of a soul derogative to itself. A lovely city speaks of people who have sought a higher version of themselves.

-Pier Giorgio di Cicco, Poet Laureate of Toronto, 2008

This thesis is interested in the application of the concept of resilience to cities suffering from chronic violence. Is the idea useful in advancing our knowledge of violent cities and in preventing or reducing violence in the afflicted area? The methods were two-fold: first, examples of resilience from different disciplines were examined to highlight some of the problems of extending resilience into the study of chronic violence. Second, using a socio-spatial capital model, this thesis explored the connection between violence and infrastructure provision in two towns in Karachi to test out the idea of a resilient space.

Using inferences from resilience theory and the Karachi case study, this chapter provides some reflections on the usefulness of alternative approaches to chronic violence. The first section summarizes the problems associated with resilience theory and proposes an alternative approach – Ring’s (2006) conflict resolution framework complemented by Lederach’s (1995) conflict transformation model. The second section will illustrate the importance in studying both social networks and the spatial features of an area in violence prevention and reduction strategies.

6.1 From Resilience to Conflict Transformation

The overview of resilience theory in Chapter 2 emphasized two ideas: 1) the idea of a resilient system is more useful in the case of an acute shock rather than a chronic one, and 2) the desire for stability and the return to system equilibrium characterizes the application of resilience to a system. These aspects of resilience are problematic in understanding chronic violence because it is an inevitable phenomenon, not a defined shock.

In the case of Karachi, the city is resilient both as an idea and as a city simply because it persists. As Vale and Campanella (2005) point out, modern cities are always re-built after shocks, not abandoned like some historical cities. The resilience test thus becomes useful at the sub-city level – how does each town or neighbourhood cope with violence? In both the Orangi and Lyari case studies, coping mechanisms (or strategies of resilience) exist at different scales, from the OPP to the Lyari street schools. The resilience test highlights the problem with using resilience – in dealing with chronic violence, people either cope or succumb to conflict. If resilience is a study of coping mechanisms, where is the attempt to move the system out of chronic violence and not merely reward, replicate, and reinforce coping mechanisms?

It is useful here to re-visit the different interpretations of conflict posited by Varshney (2002), Brass (2003), and Ring (2006). Out of the three authors, Varshney provides some semblance of hope in his civic structure hypothesis by arguing that institutions bridging ethnic groups can reduce violence, as evidenced by the OPP example. Brass (2003) adopts a more pessimistic attitude and refers to institutionalized political violence controlled by the state. The Brass

(2003) category of violence characterizes much of Karachi's political violence when city-wide riots break out as a result of political parties declaring strikes and war on one another. Lyari is victim of this institutional violence where Varshney's civic structures are unable to penetrate the tight violence-producing networks from the state to the Lyari gangs.

Ring's (2006) conflict resolution approach incorporates Brass (2003) and Varshney (2002) and provides a way forward that moves beyond theories of the benefits of civil institutions and the horrors of the endless production of violence. Ring (2006) is especially crucial in the study of chronic violence because she argues that conflict is inevitable and is a prominent feature of social relationships. However, she describes conflict resolution and mediation techniques used in the everyday context of a multi-ethnic apartment building in Karachi; conflict characterizes most of the relationships but negotiations prevent the escalation of disputes into violence. This conflict resolution framework is evident in the OPP's dealing with violence in Orangi. While the OPP remains neutral, it does try to mitigate the effects of exogenous violence in the town through one form of conflict mediation – reconstruction of infrastructure. In the 1985 and 1990 ethnic riots, the OPP attempted to quell further retaliations in Orangi by focusing the residents' attention on reconstruction, not revenge. This form of conflict management transformed what could possibly have produced more endogenous violence to a negotiation and resolution.

Ring's (2006) approach to violence in Karachi may be a better alternative than exploring resilience because it incorporates conflict as a phenomenon but also attempts to move the system from violence to conflict transformation,

similar to Lederach (1995). In Lederach's conflict transformation literature, he describes the attempt to transform the relationships that produce conflict, not just manage the outcomes of conflict, which is usually violence. He calls for both a short-range and long-range approach to a shock – the shock needs to be addressed and resolved while the state works on producing large-scale social changes over an extended period of time. As Prendergast points out in Lederach (1995) using Rwanda as an example, poorly conceived short-term responses to shocks adversely impact the government's long-term approaches. This short-run/long-run combination approach is very similar to the theory of economic resilience raised in Chapter 2.

What does the research of Lederach (1995) and Ring (2006) mean for the study of violence in Karachi? Lederach (1995) calls for both external and "insider-partial" mediators to address conflict. This complements Varshney's social capital approach because it leverages key nodes in social capital networks in the city, like the OPP. Further projects employing a social capital approach to violence in Karachi can map out social networks and indentify positive and negative nodes. How does each node participate in the production of conflict? Does each positive node necessarily engage in transforming contentious relationships? Does each negative node (gang leaders, political parties) engage in Brass (2003)-like practices which intentionally push conflict-producing relationships into violence? A social network analysis of violence in Karachi is essential in managing and eventually transforming relationships in Karachi from violence to conflict resolution.

The next section expands more on how a conflict transformation approach should include spatial interventions to complement social capital building.

6.2 Socio-spatial Capital and Violence

The case study of the Orangi Pilot Project in Karachi is an example of the important role infrastructure plays in creating “openings” in the wall of chronic violence. In Karachi, social, political, and economic, and institutional actors are the biggest sources of violence. Given its long history of armed conflict and a society fragmented on many lines, any small dispute has the potential to escalate into a larger conflict. Because housing and infrastructure provision are major problems in Karachi, reducing conflicts related to these sectors can reduce economic, social, and institutional violence.

The building of infrastructure by the state is the most visible and tangible part of the social contract between the state and its citizens. Roads, water lines, and sewer lines physically help unite a city, and forge a link between the government and its citizens. Using Davis’s (1999) theory of physical, social, and political distance here, infrastructure reduces social and political distance in a city suffering from massive urban sprawl and may even connect ethnic and political distance between factions in the divided city.

Connecting different parts of the city to one another is especially important. The OPP has been following this tenet with its surveying, mapping, and documenting techniques of informal settlements in the city. It provides each neighbourhood with maps for the residents to identify developmental goals, mobilize, and initiate projects with the state’s help. This interaction between

different parts of the city needs to be captured and scaled up, especially in a city like Karachi, where ethnic and political enclaves are prevalent. Further research is needed on spatial interactions at the sub-city level. How are economic relationships in Karachi spatially represented? Where are the hotspots of violence and why? Are some towns more prone to exogenous violence? Endogenous violence? Violence profiles for each town can identify sources and victims of violence in the city. Knowing how different parts of the city interact is essential for targeted policymaking and deployment of security forces. Linking different parts of the city together, especially informal settlements to the formal city, may build unanticipated positive social networks between residents. For example, if Lyari were not socially and infrastructurally isolated from the rest of the city, would gangs continue to operate in the town? If the KMC and SKAA started providing formal services to informal settlements in the city, including Lyari, would development-related violence decrease? Understanding how built environment initiatives transform social relationships can further articulate Lederach's (1995) and Ring's (2006) conflict transformation approach to violence in Karachi.

The process of infrastructure development and urban planning itself (when conducted in a just manner) creates trust in the state or development institutions, as demonstrated by the example of the OPP. Fostering a sense of ownership over metropolitan space, as opposed to competition that characterizes Karachi's urban crisis, can reinforce citizenship in the physical space of the city, not just in the sociopolitical space. The importance of physical citizenship is especially crucial in Karachi because of the multiple socioeconomic, religious,

and political fault lines. The social networks formed within these fault lines usually do not scale up to include other groups or formal institutions. The city-wide scale of participatory infrastructure provision can help scale up concentrated pockets of positive social capital. Major development projects like primary sewer and water lines physically transcend ethnic and political enclaves, and help unify the physical and social space of the city. To use Varshney's (2002) words, infrastructure provision on a city scale can assume the bridging role of civic structures by increasing inter-group engagement. Large-scale infrastructure provision can physically unite different parts of Karachi while providing an avenue for small-scale social networks to scale up. By being connected to and by formal infrastructure, residents can feel like they have ownership over a part of Karachi, and that they do not have to constantly fight for a physical and social piece of the city.

In pursuing urban development, the state can follow the OPP's internal/external concept in order to create both horizontal and vertical social capital, and to take reduce the pressure on an already weak government. However, in order to do this, mediating state institutions like the KWSB, SKAA, and the KMC have to be strengthened and de-politicized. The police in Karachi have effectively lost their power because of corruption and their connections to various political parties. Just, competent, state urban development agencies are the key to creating a more cohesive and accommodating urban space that can support the needs of Karachi's diverse residents.

This thesis has attempted to sketch out a relationship between the built environment, social networks, and urban violence using the concept of socio-

spatial capital. While social capital has been very well developed in scholarship, literature on spatial capital remains sparse. Spatial capital is useful in the study of violence to complement the traditional analyses of socioeconomic networks of violence. From the Lyari example, it is evident that the built environment plays an important role in creating a space conducive for violent activities, and in the Orangi case, it is clear that infrastructure provision has a positive effect in reducing violence. Marcus (2007) defines spatial capital as the degree to which urban spatial form supports urban social activities. This definition can be further expanded to accommodate urban development projects using definitions of social capital as a template. For example, does the concept of horizontal and vertical capital translate into understanding spatial capital? How can nodes in spatial capital be conceptualized and leveraged? Can spatial capital and social capital be correlated? The development of the idea of spatial capital can enhance one's understanding of how the built environment and topography can shape urban activities.

The term 'urban violence' is used to describe violence in cities but the approaches to urban violence often fail to emphasize the urban nature of violence, and mainly focus on the violence part. Urban violence is different from general violence because it is enacted in an urban setting, which contains a different set of social and spatial relationships from other types of violence, like terrorism or rural conflicts. The sheer concentration of different categories of violence in a single metropolitan space requires a systemic approach that synthesizes socio-economic relationships in the city and the spatial characteristics of the urban setting that may induce or resolve conflicts. The

larger question the study of chronic violence raises is the practical possibility of achieving urban peace. Is it ever possible to articulate one's right to the city without a fist-fight?

Appendix

Fig. 26: Below are more definitions of resilience compiled by Zhou et al. (2009)

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|---|
| <p>Holling (1973, 1986) Resilience is defined as the amount of disturbance that can be sustained by a system before a change in system control or structure occurs. It could be measured by the magnitude of disturbance the system can tolerate and still persist</p> |
| <p>Timmerman (1981) Resilience is the ability of human communities to withstand external shocks or perturbations to their infrastructure and to recover from such perturbations</p> |
| <p>Pimm (1984) Resilience is the speed with which a system returns to its original state following a perturbation</p> |
| <p>Pimm (1984); Holling et al. (1995); Gunderson et al. (1997) Resilience of an ecological system relates to the functioning of the system, rather than the stability of its component populations, or even the ability to maintain a steady ecological state</p> |
| <p>Wildavsky (1991) Resilience is the capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back</p> |
| <p>Dovers and Handmer (1992) Re-active and pro-active resilience of society can be distinguished based on the major difference between ecosystems and societies (human capacity for anticipation and learning)</p> |
| <p>Holling et al. (1995) Resilience is the buffer capacity or the ability of a system to absorb perturbation, or the magnitude of disturbance that can be absorbed before a system changes its structure by changing the variables</p> |
| <p>Adger (1997, 2000) Social resilience could be measured through proxies of institutional change and economic structure, property rights, access to resources, and demographic change</p> |
| <p>Home and Orr (1998) Resilience is a fundamental quality of individuals, groups and organizations, and systems as a whole to respond productively to significant change that disrupts the expected pattern of events without engaging in an extended period of regressive behavior</p> |
| <p>Mallak (1998) Resilience is the ability of an individual or organization to expeditiously design and implement positive adaptive behaviors matched to the immediate situation, while enduring minimal stress</p> |
| <p>Miletti (1999) Local resiliency with regard to disasters means that a locale is able to withstand an extreme natural event without suffering devastating losses, damage, diminished productivity, or quality of life without a large amount of assistance from outside the community</p> |
| <p>Comfort (1999) The capacity to adapt existing resources and skills to new systems and operating conditions</p> |
| <p>Miletti (1999); Geis (2000); Chen et al. (2008) In the context of disaster management, resilience is used to describe the ability to resist or adapt to stress from hazards, and the ability to recover quickly</p> |
| <p>Adger (2000); Kimhi and Shamai (2004) Social resilience is understood as having three properties: resistance, recovery and creativity, in which (1) resistance relates to a social entity's efforts to withstand a disturbance and its consequences, and can be understood in terms of the degree of disruption that can be accommodated without social entity undergoing long-term change; (2) Recovery relates to an entity's ability to pull through the disturbance, and can be understood in terms of the time taken for an entity to recover from a disruption. (3) Creativity is represented by a gain in resilience achieved as part of the recovery process, and it can be attained by adapting to new circumstances and learning from the disturbance experience</p> |
| <p>Carpenter et al. (2001) The Resilience Alliance consistently refers to social-ecological systems (SES) and defines their resilience by considering three distinct dimensions: (1) the amount of disturbance a system can absorb and still remain within the same state or domain of attraction; (2) the degree to which the system is capable of self-organization; (3) the degree to which the system can build and increase the capacity for learning and adaptation</p> |

Paton et al. (2000)

Resilience describes an active process of self-righting, learned resourcefulness and growth—the ability to function psychologically at a level far greater than expected given the individual’s capabilities and previous experiences

Carpenter et al. (2001)

Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future

UN/ISDR (2002)

The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organizing itself to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures

Bruneau et al. (2003)

An analysis of seismic resilience and apply the concept at four levels: (1) technical, physical systems perform when subjected to earthquake forces; (2) organizational, the ability to respond to emergencies and carry out critical functions; (3) social, the capacity to reduce the negative social consequences of loss of critical services; and (4) economic, the capacity to reduce both direct and indirect economic losses

Resilience has four dimensions: (1) robustness, strength to withstand a given level of stress without loss of function; (2) redundancy, the extent to which elements, systems that are substitutable; and (3) resourcefulness, the capacity to identify problems, establish priorities, and mobilize resources; (4) rapidity, the capacity to meet priorities and achieve goals in a timely manner

A resilient system has: (1) reduced probability of failures; (2) reduced consequences from failures; and (3) reduced time to recovery

Kendra and Wachtendorf (2003)

The ability to respond to singular or unique events

Cardona (2003)

The capacity of the damaged ecosystem or community to absorb negative impacts and recover from these

Pelling (2003)

The ability of an actor to cope with or adapt to hazard stress

Rockström (2003)

Strategies of social resilience building include manageable strategies, such as institutional development, land reform, land tenure, diversification, marketing, human capacity building, and unmanageable ones, such as relief food, cereal banks, social networks, virtual water imports

Rose (2004, 2007)

Resilience includes inherent resilience (ability under normal circumstances) and adaptive resilience (ability in crisis situations due to ingenuity or extra effort)

Aguirre (2006)

A resilient social entity absorbs, responds and recovers from the shock; and improvises and innovates in response to disturbances

Maguire and Hagan (2007)

In broad terms, social resilience is the capacity of a social entity (e.g., a group or community) to bounce back or respond positively to adversity

Kang et al. (2007)

Resilience is the ability of the system to recover once hazard has occurred and measure resilience by the duration of an unsatisfactory condition

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