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The Externalities of Strong Social Capital: Post-Tsunami Recovery in Southeast India

Daniel P Aldrich, *Purdue University*

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DANIEL P. ALDRICH[1]

Department of Political Science, Purdue University, USA

Abstract:

Much research has implied that social capital functions as an unqualified "public good," enhancing governance, economic performance, and quality of life (Coleman 1988; Cohen and Arato 1992; Putnam 1993; Cohen and Rogers 1995). Scholars of disaster (Nakagawa and Shaw 2004; Adger et al. 2005; Dynes 2005; Tatsuki 2008) have extended this concept to posit that social capital provides nonexcludable benefits to whole communities after major crises. Using qualitative methods to analyze data from villages in Tamil Nadu, India following the 2004 Indian Ocean tsunami, this paper demonstrates that high levels of social capital simultaneously provided strong benefits and equally strong negative externalities, especially to those already on the periphery of society. In these villages, high levels of social capital reduced barriers to collective action for members of the *uur panchayats* (hamlet councils) and parish councils, speeding up their recovery and connecting them to aid organizations, but at the same time reinforced obstacles to recovery for women, Dalits, migrants, and Muslims. These localized findings have important implications for academic studies of social capital and policy formation for future disasters and recovery schemes.

Keywords: social capital, disaster recovery, caste, Indian Ocean tsunami

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[1] Correspondence Address: Daniel P. Aldrich, Assistant Professor, Department of Political Science, Purdue University, 100 N. University Street, West Lafayette, IN,47907, USA. Email: daniel.aldrich[at]gmail.com.

Not long after the devastating 2004 Indian Ocean tsunami, observers noticed that similarly damaged villages on the southeast coast of India had very different patterns of recovery. One scholar described how, when relief workers arrived on the scene of a damaged village, rather than being met by "victims in shock," they were met by the representatives of the non-governmental fisher caste councils, who handed over carefully prepared lists of their casualties, damage, and needs (Bavinck 2008: 76). This self-organized, coordinated response to crisis stood was in stark contrast to the frustration and anger expressed by another hamlet nearby which felt left out of the aid framework. "One of our men has committed suicide because he never got any response to his request to re-start the small business he lost in the tsunami. We also are frustrated that the government never replies to our requests to replace the tools and handcarts we need to go back to work. We also are considering suicide" (quoted in Gill 2007: 6). What accounts for this variation in recovery?

This article uses case studies of hamlets and villages[1] in Tamil Nadu, India after the 2004 Indian Ocean tsunami to investigate the effect of varying levels of social resources on post-disaster outcomes. Based on site visits, interviews with local residents and NGO leaders, and an analysis of secondary and tertiary materials, the article argues that villages with high levels of bonding **and** linking social capital received greater amounts of aid and assistance more quickly than communities which possessed only bonding capital. However, while villages more tightly linked to outside organizations experienced better post-disaster recovery, minorities, outcastes, and nonmembers in those hamlets were often excluded from the assistance process. That is, hamlets which overcame collective action problems and efficiently extracted resources from donors and government officials also left out tsunami-affected villagers on the social margins of society. Through links to external agencies, coordinated villages with *uur panchayat* (hamlet or

fisher council) leadership were able to transmit their interests and needs, while at the same time pushing aside those residents on the periphery. Based on the experiences of these villages in which governance institutions serving as connectors to outside agencies engaged in caste-based discrimination, future scholarship on disaster recovery must not overlook the negative externalities that can accompany strong social networks. The negative externalities illuminated here include exclusion from organized relief efforts and discrimination against nonmembers in a variety of institutional settings.

It has become something of a "self evident truth" (Ostrom 2000) that social capital functions primarily or solely as a "public good" (Coleman 1988; Cohen and Arato 1992; Putnam 1993; Cohen and Rogers 1995), that is, a resource which provides nonexcludable benefits, so that all residents of a high social capital neighborhood enjoy its positive side effects. More broadly, many researchers envision that "a robust, strong, and vibrant civil society strengthens and enhances liberal democracy" (Chambers and Kopstein 2001: 837). Social scientists studying disaster have applied this logic to argue that high levels of social capital speed up post-disaster recovery for communities affected by crisis (Nakagawa and Shaw 2004; Dynes 2005; Tatsuki 2008). In a widely cited article (Adger et al. 2005: 1038) the authors claim that social capital has a role in "buffering the effects of extreme natural hazards and promoting social reorganization." This article offers a more nuanced view of social capital's role in disaster recovery, recognizing it as a "Janus-faced" resource (Szreter 2002) which brings both benefits **and** costs; social networks bring about different policy and governance outcomes for groups within the mainstream than those at the periphery. This article focuses on collective outcomes for villages and hamlets, not individual recoveries; it is possible to find positive individual recoveries for residents even in low social capital areas and vice versa.

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This article first describes the relevant literature on the role of social capital in recovery, lays out the context for the study, and identifies the data and methodology used in the analysis. It then investigates villages with varying levels of social capital to check their post-tsunami recovery levels, discusses the results of this analysis, and concludes with policy recommendations and suggestions for researchers based on these findings.

Literature Review: Social Capital in Disaster Recovery

Definitions for social capital – introduced to social scientists by James Coleman (1988) and later popularized by Robert Putnam (1993, 1995, 2000) – vary, but for this study its core elements revolve around the "networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam 1995: 67). Perhaps the most succinct and focused explanation comes from Lin (2008: 51) who defined social capital as "resources embedded in one's social networks, resources that can be accessed or mobilized through ties in the networks." An individual's social networks set his or her trust levels (that is, whether members of the network are assumed to carry out their obligations and obey norms) and expectations of reciprocity (if acts of kindness are to be repaid and if individuals are expected to free ride or not) (Coleman 1988). Higher amounts of social capital allow groups to overcome the typical barriers to collective action which regularly stymie mobilization (Olson 1965). For example, villages in India with higher levels of social capital and active leadership displayed better performance in the field of economic development, community peace, and democratic participation (Krishna 2002), while regions in Italy with higher levels of social capital displayed more responsive governance and stronger economic growth (Putnam 1993).

Research has identified three distinct forms of social capital: bonding, bridging, and linking. *Bonding social capital* grows from organizations and activities connecting similar individuals who often live in close proximity to each other (cf. Schuller, Baron, and Field 2000). Putnam (2000: 22) sees bonding social capital as "undergirding specific reciprocity and mobilizing solidarity" among homogeneous individuals and Woolcock (2002: 26) similarly defines it in terms of relations between "family members, close friends, and neighbors." This type of social connection often links individuals already very similar to each other in terms of race, ethnicity, or religion. Social scientists term this condition "homophily" and it explains why our informal networks for recreation and leisure are often quite similar to us. Research on social ties has confirmed the long-held intuition that homogeneity brings with it higher levels of social capital, while ethnic diversity does the opposite (Leigh 2006). One large-N study of 41 communities across the United States showed that inter-racial trust and trust of neighbors was highest where ethnic homogeneity was highest; alternatively, higher levels of diversity brought about lower levels of engagement and social capital (Putnam 2007). Another survey on 307 Flemish towns found that "municipalities with a more heterogeneous population indeed have lower levels of social capital" (Coffe 2009: 155). Broadly speaking, more homogenous localities are most likely to have higher levels of civic participation, trust, and bonding social capital (Alesina and La Ferrara 2000).

Bridging social capital, in contrast, involves "linkage to external assets" and generates "broader identities" (Putnam 2000: 23) by connecting individuals across typical cleavages. Bridging activities and organizations bring together individuals from different neighborhoods, ethnicities, and races (Schuller, Baron, and Field 2000). Varshney (2001), for example, documented how inter-ethnic trade unions, political parties, sports clubs, and other organizations

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brought together Hindus and Muslims in India and dampened social conflict between them.

Parent-Teacher Associations in the United States bring together parents of various ethnic

backgrounds and religions, as do public schools. Where bonding social capital reinforced

obvious affinities between residents, bridging social capital can connect diverse individuals.

Szereter and Woolcock (2004: 655) discuss a third type – *linking social capital* – that is

composed of "norms of respect and networks of trusting relationships between people who are

interacting across explicit, formal or institutionalized power or authority gradients in society."

Where bridging social capital connects individuals of more-or-less equal social status, linking

social capital connects those of unequal status, providing them with access to power. Linking

social capital brings together citizens with decision makers and leaders who hold positions of

authority and can distribute often scarce resources. For example, most villagers living in hamlets

in southeast India never interact directly with government officials or NGO representatives

(Interviews, February 2008). After the tsunami, though, some caste councils developed direct

connections to outside organizations, including independent aid agencies, international NGOs,

and civil servants within the Indian government. Both in India and abroad, disaster survivors

able to access such non-local authority figures had measurably better recoveries than those

without such extended networks (Beggs, Haines, and Hurlbert 1996; Wetterberg 2005).

More broadly, research has generally linked higher levels of social capital to better post-

crisis outcomes. For example, an investigation of the role of village social ties in Indonesia

during the Asian financial crisis showed that "certain types of social ties are indeed a sort of

capital for the poor, who are able to use their relationships as a way of improving well-being"

(Wetterberg 2005: 1). Nakagawa and Shaw (2004) argued that localities with higher levels of

social capital demonstrated better recovery following earthquakes in India and Japan. Dynes

(2005) has suggested, based on experiences of survivors in a number of disasters, that social capital may be the basis for resilience (the ability to recover from trauma and crisis), as it provides information and resources at critical junctures.   Adger et al (2005: 1038) claim that "strong local social cohesion and mechanisms for collective action have all enhanced resilience" in post-tsunami Indonesia.   Similarly, strong social ties among coastal dwellers in the Andaman and Nicobar Islands enabled rapid in-group assistance to tsunami-affected children. "The social capital of the *tuhets* [joint family] is so strong that there is no need for any external aid agencies to assist orphaned children from any tribal community" (Gupta and Sharma 2006: 74).

Neighborhoods and villages with wider and denser networks implement faster recoveries following a disaster for three reasons. First, strong social ties can serve as "informal insurance," allowing victims to draw upon ready-made support networks for financial, physical, and logistic guidance (Beggs, Haines, and Hurlbert 1996). Similarly, "[a]ctors who have connections outside their immediate community are likely to be better off, as they can draw on these links when local resources are insufficient or unavailable" (Wetterberg 2005: 7). More broadly, information and signals from civil society – such as "who is coming back when and what services will be provided" – are critical to decision-making processes of survivors, and cannot be replaced by government pronouncements (Chamlee-Wright and Rothschild 2007: 2). Social networks thus provide essential information, support, and guidance through strong and weak ties (Granovetter 1973).

Second, organized communities can better mobilize and overcome barriers to collective action (Olson 1965). Neighbors with greater levels of trust share information about bureaucratic procedures and upcoming deadlines, monitor public space to prevent dumping, and deter looting in their community. Following the 1995 Kobe earthquake, for example, local residents in some

neighborhoods organized to cooperative, fireproof housing while other areas waited for guidance

from city officials (Olshansky, forthcoming). As DeFilippis (2001) has argued, social capital can

assist individuals in attracting and controlling resources, as better organized and mobilized

regions can more successfully access the loans, supplies, and other resources (Dow 1999).

Finally, social networks raise the cost of "exit" from a community and increase the

probability that residents will use "voice" (Hirschman 1970). Deeper social ties act as a barrier

to exit – one of the potential responses to a crisis - and make it more likely that residents who are

embedded in the community will work for a solution. Areas with softer voices - those plagued

by weak community ties - will rebuild more slowly, if they rebuild at all (Kamel and Loukaitou-

Sideris 2004). Citizens bound by fewer ties to their neighbors are more likely to engage in

illegal and disruptive acts which can impede recovery efforts (Varshney 2001; Lee and

Bartkowski 2004).

However, scholars who envision social capital solely as a nonexcludable resource which

provides positive benefits to all may have overlooked its accompanying externalities, including

the "exclusion of outsiders" (Wetterberg 2005: 4). Some have seen the foundational work of

Putnam (1993, 1995, 2000) and Coleman (1988) as overplaying the "public good" aspect of

social capital without fully acknowledging its costs (Berman 1997; Chambers and Kopstein

2001). Strong bonds between members of an in-group, for example, may reinforce hatred and

xenophobia and facilitate destructive action so that denser social capital contributes to criminal

activity directed at outsiders (Nagar and Rethemeyer 2007). Further, during post-Katrina

recovery in New Orleans, Louisiana, neighborhoods with higher levels of bonding social capital

mobilized to block recovery plans – a tactic which they believed benefited their blocks but which

slowed the process of recovery as a whole (Aldrich and Crook 2008). This article builds on the

observation that strong social capital can bring with it a "paradox" (Foley and Edwards 1996): in-group participants gain more resilience to shocks and better coordinate their recovery efforts but out-group residents find themselves further on the periphery.

Given that social capital does not manifest itself in the same form across time and societies, its measurement must be sensitive to the historical period and cultural environment under investigation (Krishna 2007: 944-945). Serra (2001) argued that standard Western measures of social capital, such as those used by Putnam in his 1993 study of northern and southern Italy - including literacy, voter turnout, and membership in horizontal associations – did not map well onto the empirical realities of Indian states. Krishna (2003: 9) similarly argued that measures which capture the "density of formal organizations" would be "particularly inappropriate for Rajasthan villages." Instead, Serra (2001: 699) posited that in India, "kinship ties or…caste and religion which provide vital support to individuals" best reflect social resources. This article focuses on local caste or hamlet councils (known as *uur panchayats* in Tamil) as a critical, institutionalized source of social capital on the southeast Indian coast. *Uur panchayats* are distinct from the formal *gram panchayats*, which are the lowest tier of the subnational governance bodies established by the government. Where *gram panchayats* serve as the locus for local government in small villages and towns throughout India and exist at the village, block, and district levels, *uur panchayats* are hamlet-level councils structured by caste and occupation most commonly found in fishing villages (Bavinck 2001, 2008). These nongovernmental organizations reinforce existing caste- and occupation-ties.

Villages in post-tsunami Tamil Nadu which were governed by caste councils regularly held higher levels of both bonding and linking social capital, while unorganized hamlets may have had similar levels of bonding social capital but displayed far lower levels of linking

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connections. These *uur panchayats* reinforced existing ties between same-caste members and governed villages from a gendered, caste perspective, often excluding women, outcastes, and minorities from participation and distribution. Table 1 below lays out examples of the interactions between these two types of social resources based on the cases discussed throughout the article.

[Table 1 about here]

Two core mechanisms, then, could increase the success of recovery efforts post-disaster. First, deep reservoirs of bonding social capital create tightly knit support networks and the ability to overcome collective problems. Such connections – which can bring information and local assistance - are most likely in localities with long term residents and caste homogeneity, such as Dalit villages and *uur panchayat*-led ones. The second mechanism involves translocal connections to NGOs and government agencies; such links help survivors and villages more quickly and easily acquire often scarce resources post-crisis from beyond their typical reach. In the handful of villages under study here, hamlets led by *uur panchayats* benefited from both mechanisms after the tsunami, but minorities, women, and other peripheral groups in those towns often lost out during the aid distribution process because of their lack of translocal connections. Dalit villages and other localities without links to the outside world had only bonding social capital to assist them in their recovery process, while mixed-caste coastal villages lacked both bonding and linking social capital.

Context for the Study

Two massive underwater earthquakes off the coast of Sumatra on the morning of 26 December 2004 – measured at 9.0 and 7.3 respectively - generated tsunami waves which reached

as far as Africa (Arya, Mandal, and Muley 2006: 52). The enormous waves crashed down on coastal villages in Indonesia, Sri Lanka, India, Thailand, and Myanmar (Sheth, Sanyal, Jaiswal, and Gandhi 2006: S439). Speaking about his experience in Sri Lanka, Dayalan Sanders described "a massive 30 foot wall of sea…it was like a thousand freight trains charging at you, that thunderous roar itself petrified you with fear" (quoted in Bindra 2005: 29). Across Asia, more than 200,000 people lost their lives. In southeast India, the 13 coastal districts in the state of Tamil Nadu suffered the worst effects, with approximately 8,000 people killed by the waves (REDS 2006: 13). 6,000 residents were killed in the district of Nagapattinam and 817 and 606 died in Kanyakumari and Cuddalore districts, respectively (Arya, Mandal, and Muley 2006: 53; UN Team for Recovery Support 2005: 3).

As in past disasters, the tsunami affected vulnerable demographic groups most severely, with women and children comprising most of the casualties (United Nations Team for Tsunami Recovery Support 2007: 9). Fishing communities sustained the largest losses of lives and property loss due to their location on the coast (Alexander 2006: 8). Surveys showed that more than 60 percent of families in the area perceived they had lost a quarter or more of their income, while one in five families reported that they lost between three-quarters and all of it (Fritz Institute 2005: 4). The roughly 2000 kilometers of coastal area in southeast India accounted for 85 percent of the damage (Salagrama 2006b: 5) as more than half of these villages sit within 200 meters of the shore (Rodriguez, Balasubramanian, Shiny, Duraiswamy and Jaiprakash 2008: 18). Along with coastal roads, bridges, and ports, more than 150,000 homes were demolished by the force of the waves (United Nations, World Bank, and Asian Development Bank 2006: 8) with $1.3 billion in property and asset losses. The tsunami destroyed or damaged 80,000 fishing boats,

killed 32,000 livestock animals, and damaged and salinated close to 40,000 hectares of agricultural land (OSGSETR 2005: 7).

The government of India acted as quickly as possible to both resettle survivors and provide them with adequate food, shelter, and medical treatment. Rushed evacuation procedures resulted in the random placement of many survivors in temporary shelters and villages where they had few, if any connections (see Aldrich forthcoming). In interviews, survivors described how they were randomly assigned to temporary shelters and that "people were placed with people of different communities" (Case 7, Tata Institute 2007). As one survivor reported, "[m]y old neighbors are not nearby, they are in the locality but far from my house. It was a lottery to choose locations for houses" (Interview, 20 February 2008). This disaster recovery policy brings with it important implications for social networks; I will return to discuss this issue at the end of the article.

Damage across the southeast coast of India varied by geography – villages and hamlets in alluvial delta regions, such as Akkaraipettai in Tamil Nadu, experienced "maximum wave heights" and were often wiped out (Sheth, Sanyal, Jaiswal, and Gandhi 2006: S440) while areas further inland or protected by sand dunes often escaped unscathed. Some coastal Indian villages received telephone calls from relatives in cities warning them of the impending wave, but could not always able to act upon it in time (Case 7 and Case 12, Tata Institute 2007). Beyond escaping harm, certain communities in the Tamil Nadu area affected by the waves have recovered more quickly than others with similar levels of damage (Author site visits, February 2008). More specifically, some villages brought in large amounts of financial assistance, NGO donations, new housing stock, and attention, while others seemed left out of the recovery process.

In a survey of 63 villages affected by the tsunami, Dalit, outcaste, and nonmember victims in 16 percent of the villages – a group of roughly 7800 people - were eligible for relief but did not receive it in part or at all due to discrimination by gatekeepers (data from Louis 2005: 2, 6-7). Other reports claim that residents in more than 80 percent of villages, Dalits and other groups encountered discrimination in compensation procedures (Gill 2007: 30). In some villages Dalit families were forced out of communal temporary shelters and their children were made to eat in separate locations from the other students (Gill 2007: 12). In one case, an elderly Dalit woman lost her husband to the tsunami but received nothing due to the gate keeping measures of the local panchayat. When two Dalit families in her village sought to stand in line to receive assistance, they were beaten and driven away (Case 43, Tata Institute 2007).

In another village, an NGO sought to provide a young widow with a new house post-tsunami, but she was told by council leaders that "if the panchayat decided that single women will not be given a house then she has to hand it over to the panchayat." Further pursuing her claim to her own house, she was told that "single women don't need large houses like that" (Case Study 2, Tata Institute 2007). In a different case where the tsunami had killed both parents in a household and a grandmother took over their care, "no attempt was made to collect information on their circumstances for the purpose of aid distribution" due to the gender and age of the primary caregiver (Help Age International 2005: 7). Widows and women in marginal economic positions, such as dried fish vendors, were also denied compensation (Gomathy 2006c: 235) in what some called a "double deprivation" due to belonging to "a socially deprived group" with "lesser access to public services…and entitlements" (Sharma 2005: 6). Even when aid has been provided to the community as a whole, these measures have "made little impact on…Dalit families" (Dorairaj 2005). Migrants too faced difficulties in being listed for assistance or

receiving aid through the *uur panchayat*s. Because the council saw them as non members, "only

281 families out of 420 have been enumerated for post-tsunami relief" (Gomathy 2006c: 233).

Parish priests and councils, like their *uur panchayat* counterparts, worked as

intermediaries between villagers and NGOs, so that "[i]nformation from the parish priest and

panchayat, not direct information, was taken" by relief organizations (Case 7, Tata Institute

2007). In areas like Kanyakumari, residents complained that only families active in Catholic

Church activities "benefited from the economic, social and educational opportunities made

available" (REDS 2006: 29).   In another village, families which did not engage in Church-

sanctioned educational procedures found themselves excluded from the aid process. When local

families chose not to send their children to the village's church-run schools, those 16 families

"facing the boycott were deprived of the NGO largesse, routed through the church"

(Newindpress.com, 1 May 2006).   What systematic role institutions like the *uur panchayat* and

parish councils played in the process of recovery is a critical question to which the article now

turns.

Data and Methodology

This article uses data gathered from site visits by the author to affected communities in

Tamil Nadu, India, observations of post-tsunami recovery levels, interviews with survivors and

NGOs, and extensive secondary and tertiary materials (including evaluations of the recovery

carried out by local social service providers, grey materials from NGOs and government

agencies which provided post-tsunami services, and local newspaper and wire service accounts

of the recovery, translated from Hindi and Tamil when necessary). In early 2008 I visited five

villages (and two cities[2]) in southeast India affected by the tsunami and interviewed 27 survivors,

NGO leaders, activists, and disaster scholars with the assistance of a translator using open-ended

questions about their experiences; I used secondary and tertiary materials (as detailed above) to

study the sixth village. I provide details on the gender, position, and location of these informants

in Table 2.

[Table 2 about here]

Roughly one-third of my informants were women, and four-fifths were local residents; our

discussions lasted between 30 and 45 minutes each, on average. Additionally, I was provided

access to 80 anonymized cases of hour-or-longer interviews with local survivors collected by

Indian social service agencies after the tsunami. These transcribed interviews provided

additional information about the day-to-day recovery process and broadened my understanding

of the role of social resources in rehabilitation.

I deliberately selected these six villages because of the variation in both levels of social

capital and recovery through a selection process known as choice-based sampling method (see

King, Keohane, and Verba 1994, sec. 4.4.2). I chose these villages after consultation with local

NGO and relief agency leaders working in the area who provided their expert insights into the

range of outcomes and village characteristics. Table 3 below describes basic characteristics of

the six villages under direct study here; communities with a higher percentage of their families in

new or repaired housing, whose survivors self-reported positive recoveries, and which were

labeled by local agencies as doing well were categorized as having "good" recovery outcomes.

Alternatively, those communities with greater numbers of survivors who remained in temporary

shelters, a smaller percentage of their community in rebuilt or new housing, more self-reports of

obstacles to recovery, and which were seen by experts as not recovering well were categorized as

having "poor" outcomes. These six villages do not serve as a sample of the entire universe of

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cases; rather, case studies of their recoveries can help develop and probe new hypotheses about the relationships between social capital and post-disaster recovery.

[Table 3 about here]

These six villages are located in the state of Tamil Nadu (India has 28 states) and within the district of Nagapattinam (Tamil Nadu is divided into 32 districts), located on the southeast coast of India. Tamil Nadu has grown more slowly than most other Indian states over the past decade but has displayed higher than average levels of population density and urbanization. Its overall literacy rates climbed from two-thirds in 1991 to almost three-quarters by 2001 and it has been a leader in digitizing land records and instituting "E-governance" in which government services can be access through the internet (REDS 2006: 30). For the district of Nagapattinam, population density (based on the 2001 census, which is the most recent available data) was 520 people per square kilometer in rural areas, 700 people per square kilometers in fishing hamlets, and 1720 people per square kilometer in rural ones.

This article employs qualitative methodology to make replicable inferences (King, Keohane, Verba 1994) about the relationship between social capital and the levels of post-disaster recovery. I use side-by-side case studies to tease out underlying causal mechanisms (George and Bennett 2004). Process tracing – like its quantitative counterparts – relies on within-and across-case covariational evidence (Gerring 2004) to better illuminate the role of relevant factors. A solid research design requires variation in both independent and dependent variables, and the villages under study had both varying levels of social capital (as indicated by the presence or absence of an *uur panchayat*) and recovery outcomes (determined by quality of housing and self- and external-reports on the recovery process).

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Case Studies of Villages with Strong Bonding and Linking Social Capital

In hamlets 1, 3, 4, and 5 parish councils and *uur panchayats* (caste councils) dominate the social order, as they do in many other fishing villages in coastal Tamil Nadu (Gill 2007: 22). These non-state organizations connect same-caste residents in one industry – Catholics who work in sea-related industries for parish councils in the south and Pattinvars[3] who are fishers for *uur panchayat*s in the southeast – to each other, reinforcing existing bonding social capital in these localities. Many coastal villages in Tamil Nadu are highly homogeneous, with Pattinavar fishing families making up 90 percent of the population and the remainder of the families coming from Dalits[4] and various other castes (Bavinck 2008: 79; Sharma 2005: 4). Ties between members of the fishing communities are strengthened due to shared caste and kinship groupings; members of the community who marry outside their caste "can be severely punished with ostracism by the community" (Gomathy 2006c: 218).

Parish councils and *uur panchayat*s serve both as informal law and norm enforcers and as common pool resources (CPR) managers (Ostrom 1990; Salagrama 2006: 76; Bavinck 2008: 81). These councils maintain *gramakattupadu* (discipline in the village) (Gomathy 2006b) through dispute resolution and the managing of religious events. In the past, councils engaged in hard and soft social control mechanisms (Aldrich 2008) through social pressure, fines, and ostracism (known as *mariyal*), but presently "many of the villages restrict themselves to fining" (Gomathy 2006c: 221). More broadly, a council "maintains community structure, rituals, village membership, resource distribution, dispensing of justice and grievance redressal" (Rodriguez, Balasubramanian, Shiny, Duraiswamy and Jaiprakash 2008: 11; see also Gomathy 2006c: 219). The distribution of shared supplies to members during the rainy season when fishing catches typically ran low (Bavinck 2008: 82) provides a typical example of their coordinated collective

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action. These councils which initially reified "bonding" social capital (that is, assisting in-group members) came to serve more as "links" with outside agencies after the tsunami. Before the tsunami, fishing communities were said to lack connections to and awareness of the "larger world" (Salagrama 2006: 43) – that is, many had small amounts of *linking* social capital - but the disaster brought them new roles as bridges to external aid organizations and the government.

The 2004 tsunami transformed these institutions into critical gatekeepers for aid distribution, as the government of India relied heavily on these councils during the relief period. Government and NGO decision makers saw local councils as "the only institution that can provide continuity, growth and indeed sustenance to the process of redevelopment initiated in the villages" (South Asia Regional Knowledge Platform 2005: 7). Neither the government of India nor the NGOs involved in recovery could survey or interview every villager about his or her needs, so they relied on "lists prepared by fisher panchayat [that is, *uur panchayat*] leaders" (REDS 2006: 15) to appraise damage levels. "In many cases, [*uur panchayats*] acted as a one-stop shop for the rehabilitation agencies (both Government and NGOs) to channel support into the communities" (ICSF 2006: 206). Thus villages 1, 3, 4, and 5 held stronger levels of linking social capital than hamlets without these governing bodies, and these ties provided survivors with connections to NGOs and the government post-tsunami.

Once the hamlet and parish councils assessed the destruction and provided this information to the government of India and to NGOs, they stored all of the incoming aid. Rather than disbursing supplies as they came in, many *uur panchayat*s sought to create an equitable distribution system for their *recognized* members (Author interviews, 2008; Gomathy 2006). "If the organization could dispense enough relief to all the members, distribution followed. Otherwise they were asked to deposit the materials till more were collected, in order that they

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could be distributed to all members of the community." (Gomathy 2006c: 232). For example, in one village the council "collect[ed] all boats that are given by the NGOs as well. These boats [we]re then sold to those who can buy them, with the rest of the money being distributed among other community members" (Tata Institute 2005: 14). Individuals or families within the village refusing to conform to these procedures found themselves facing social control mechanisms. "Five fishing families, who had 'refused to surrender to the panchayat the cash and material relief they received from various service organizations,' were excommunicated by the *uur panchayat*" (Bavinck 2008: 88).

While the strong social ties embedded in these organizations allowed them to overcome collective action problems and speed up the recovery of their members, those ties also made it difficult – if not impossible – for groups such as Dalit, women, and the elderly to receive aid or participate in the process. Because the *uur panchayat*s and parish councils created the lists of families requiring assistance, they could easily exclude – deliberately or because of unintentional oversight – nonmember families considered unworthy of aid. "[The panchayat] identified all beneficiaries but in some cases they excluded those in conflict with the panchayat along with outcastes" (Interview 7, 21 February 2008). Women – especially women who headed households - and Dalit had never been formal members of *uur panchayat*s before the disaster (Gomathy 2006c: 224; see also Sharma 2005: 4; Martin 2005: 44) and the process of recovery highlighted cultural barriers for them and other subgroups, including tribal communities (*adivasi*), single or widowed women, and the elderly (United Nations, World Bank, and Asian Development Bank 2006: 16; Menon 2007: 6). This may have been because the panchayats "often operated under the assumption that single and elderly women are taken care of by their family members and hence do not require ration [sic] in their own right" (Pincha 2008: 24).

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These villages – 1, 3, 4, and 5 – would inhabit the bottom, right-hand box in Table 1, holding

high levels of both bonding and linking social capital. While their overall recoveries were rated

as "good, "minorities within these villages reported the greatest amount of discrimination and

exclusion from the recovery process. I now turn to investigate villages which lacked

institutionalized bonding and linking capital to investigate their post-tsunami recovery.

Case Studies of Villages with Low Levels of Bonding and Linking Social Capital

While villages 2 and 6 lacked *uur panchayat* or parish councils and had poorer recovery

outcomes in terms of housing and aid receipt, they also had almost no recorded cases of

exclusion or discrimination (Interviews with residents, February 2008). In such communities,

"[e]xistence depends on the ingenuity of women, mutual support within extended families, and

minimal income derived from intermittent, informal sector jobs" (Bunch, Franklin, Morley,

Kumaran, and Suresh 2005: 3). Residents which lack a governing caste council must rely solely

on existing, often kin-based bonding social capital during the post-crisis period, as they lack

linking capital which could connect them to NGOs or government representatives. As many

scholars of social networks have pointed out, for underdeveloped regions and for individuals of

low socioeconomic status, bonding social capital allows them to "get by," but without

connections to extra-local organizations they have difficulty "getting ahead" (see Woolcock and

Narayan 2000 for an extended discussion).

These isolated villages did not connect to the government of India or to local or

international nongovernmental organizations in the post-tsunami recovery process. One village –

which I have labeled as Village 6 – lacked a caste council and was unable to collectively

mobilize and extract resources from the outside agencies after the tsunami. Lacking communal

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leadership and contacts with the broader relief world, the village was left out of the rehabilitation process. Unlike other communities which could engage in collective action, "[n]o communal strategies were employed" in "propagating an image of a wrecked and affected tsunami village" and "no efforts were made to contact any outside aid organizations and ask for help" (Mercks 2007: 39-40). Instead, residents in village 6 were forced to rely on family members for assistance and literally were not on the maps of relief providers; a local NGO eventually came on the scene and tried to assist them (long after the recovery had started for other hamlets).   This is in strong contrast to the successful ability of hamlets (described above) which self-organized to bring in external assistance.

Village 2 – which, like its caste-council-governed counterparts, suffered heavy damage from the tsunami – also lacked an organizing caste or parish council before the disaster. Attempts to interface with outsiders both domestic and international floundered and survivors could rely only on kinship ties and bonding social capital to find assistance. Its process of recovery, then, did not favor one caste group, gender, or demographic over the other, but it also lacked the resources flowing into better-connected communities. Some of the residents recognized that their recovery had been compromised due to a lack of connections and social capital. As one survivor in the village told me, "We are [now] planning to make a panchayat… I believe that people with panchayats received more benefits because they were better organized" (Interview 11, 19 February 2008). These two villages – Village 2 and Village 6 - would sit in the upper, right-hand box of Table 1; their caste homogeneity and strong support networks involve a great deal of bonding social capital, but they lacked connections to extra-local agencies.

Finally, one scholar described poorer post-tsunami outcomes for heterogeneous fishing communities in Tamil Nadu– hamlets which lacked **both** bonding and linking social capital.

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Without coordinating mechanisms such as parish or hamlet councils, this "precluded their coming together for collective and effective articulation of their views" (Salagrama 2006: 60). Such villages – lacking both bonding and linking social capital – would reside in the upper, left-hand box of Table 1. For residents and survivors of these villages, while everyone has received the same treatment and discrimination has been absent, recovery has been slower and impeded by a lack of external connections and resources.

Presentation of Findings

As past studies have argued, higher levels of social capital in tsunami-affected villages in Tamil Nadu provided resources for a faster and more efficient recovery (Nakagawa and Shaw 2004; Dynes 2005; Adger et al. 2005; Tatsuki 2008). However, these past studies have overlooked a critical point: whereas institutionalized bodies of strong bonding and linking social capital – such as *uur panchayats* – sped up the recovery for their members, they simultaneously slowed it down for outsiders and those on the margins of society. Strong social capital brought with it a number of benefits, including more robust mental health outcomes and greater access to logistical and financial resources for survivors. The strong local institutions of caste and parish councils served as focal points and mediators with the aid community during the relief efforts, ensuring that in-group members received aid. Social capital reduced the need for counseling and external intervention post disaster (Gupta and Sharma 2006: 74) and social support systems - such as extended and joint families- "contribute[d] to the community's resilience" (Mehta 2007). Further, the weak ties (Granovetter 1973) which extended outside affected communities provided up to one-third of the financial assistance delivered to tsunami-affected households (Nidhiprabha 2007: 26). Scholars must now begin to recognize that – at least in the case of Tamil Nadu

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villages after the tsunami - these benefits come with exclusion of outsiders, such as widows, Dalit, Muslims, the elderly, non-Christians and migrants. Especially in societies where racism, caste discrimination, and other forms of social persecution persist, such governance institutions may bring negative externalities. This "double-edged" (Aldrich and Crook 2008) or "Janus-faced" (Szreter 2002) nature of social capital in post-disaster situations must be recognized in future scholarship.

Finally, in terms of potential methodological pitfalls of the current article, while the sample size of villages in this study has been quite small, and these hamlets do not constitute a random or representative sample, the findings from these hamlets have been corroborated by larger studies of Tamil Nadu hamlets (Louis 2005). That is, scholars have uncovered similar relationships between strong social capital and negative outcomes in other studies of post-crisis recovery in southeast India (Gill 2007). Recent scholarship on post-Hurricane Katrina recovery in New Orleans has similarly shown that communities with both local bonding and extra-local bridging/linking social capital demonstrated more resilience than those neighborhoods solely with bonding ties (Elliott, Haney, Sams-Abiodun 2010).

Conclusions and Policy Recommendations

Villages and hamlets in Nagapattinam with both bonding and linking social networks fared better than those solely with bonding connections (cf. Woolcock and Narayan 2000), but such localities practiced discrimination with some regularity. Whether in pre-Nazi Germany (Berman 1997), early 21st century Thailand (Callahan 2005), or post-Katrina New Orleans (Aldrich and Crook 2008), strong social capital has often been accompanied by costs, especially for out-group residents and nonmembers. Future research should seek to investigate the

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externalities of social capital in post-disaster situations in multiple contexts and time periods. Given the regularity of disasters, and predictions that their destruction of lives and property will only continue to grow (Hoyois, Below, Scheuren, and Guha-Sapir 2007), disaster research remains a critical focus for social science. C. Wright Mills (1959) pointed out that social science provides individuals with mastery over an increasingly complex world, and a better understanding of the recovery process would provide survivors and policy makers alike with "usable knowledge" - knowledge that is both accurate and politically tractable (Haas 2004: 572). With the ubiquity of disasters and the certainty that coastal communities around the world will be experiencing the consequences of global warming in the near future, as scholars we have an obligation to better understand the factors which can expedite or block efficient and equitable recovery.

Despite the dawning recognition of the importance of social capital in mitigating the effect of disasters (Hutton 2001; Mathbor 2007), standard post-disaster aid procedures continue to focus primarily on restoring physical infrastructure damaged by the disaster. For example, when discussing the grants and loans provided to Indian coastal communities, the United Nations, World Bank, and the Asian Development Bank (2006: 26) argued that "During disaster situations, roads and bridges serve as links not only for launching rescue and transporting for relief and rehabilitation, but also as escape routes. Therefore, the criticality of roads and bridges is indisputable." As an afterthought, these organizations acknowledged that community level social workers should encourage victims to participate in community events (2006: 34) to help them rebuild their social networks. Social, not physical, infrastructure should be a mainstay in disaster mitigation and recovery policies.

Next, this article has sought to correct a naïve conception of social infrastructure in which social capital enhances resilience without bringing harm (cf. Adger et al 2005). Observers envisioned the high cohesion within South Asian fishing communities as a symbol of "strong sense of camaraderie and community membership among the individuals residing in the same area" that leads to "altruistic behavior" (Rodriguez, Wachtendorf, Kendra, and Trainor 2006: 173). However, Wetterberg pointed out that (2005: 27) "social capital must be thought of as a potential source of benefits, rather than the benefits themselves," and this article would further amend our understanding so that social capital needs to be seen as potential source of **both** benefits and costs.

Finally, policy makers should first ensure that recovery and rehabilitation plans do not destroy existing social capital through resettlement processes. As mentioned earlier, post-tsunami evacuation regularly placed survivors far from their family, friends, and social networks. If possible, disaster planners should evacuate people in socially intact groups or at least reassemble evacuees in intact communities. Local residents themselves recognized the benefits of maintaining and strengthening networks after the tsunami. In one study, an older woman reported that "[m]any people in this camp are from the same street and village in which I live and we all help each other" (Help Age International 2005: 12). Some self-organized in their evacuation, so that "[p]ost tsunami, all the members of one village decided to stay together in the temporary sheds in a gesture of unity, especially to support people who have lost their dear ones" (Gomathy 2006c: 218). These survivors intuitively recognized that "[w]omen who are able to access familiar religious sites, markets, hospitals, relatives, friends and other resources will be far less vulnerable to abuse, exploitation and psychological distress" (Banerjee and Chaudhury 2005)

A second goal for disaster planners should be to consider how to expand both bonding and linking social capital so as include excluded groups and develop outreach skills for these peripheral residents at the same time (Elliott, Haney, Abiodun 2010). Initial signs indicate that this may be happening. The Mumbai-based Tata Institute of Social Sciences (TISS) has developed a leadership seminar to increase the mobilization capacity of indigenous groups and tribal peoples in India to better connect with outside communities. Through such programs otherwise insular groups may develop new linking social capital which puts them in touch with new resources and organizations. Local NGOs, such as the National Council of YMCAs of India, has begun providing training to women to expand livelihood options including matt weaving and diamond polishing (Site Visit, 19 February 2008). These new skill sets and new government regulations requiring the names of both husband and wife on land titles will provide women additional leverage to push for broader participation both in political and economic spheres. Public policy should ensure that wherever possible, societies work to build up the bonding and linking social networks of vulnerable communities to ensure that they will be better positioned against future disasters.

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Table 1: Interaction between Bonding and Linking Social Capital, with Examples

	Low Bonding Social Capital	*High Bonding Social Capital*
Low Linking Social Capital	Heterogeneous coastal villages without *uur panchayats*	Homogeneous Dalit villages
High Linking Social Capital	[No applicable case]	*Uur panchayat*-led villages with links to outside agencies

Table 2: Details on Informants

Interview Number	Gender	Position	Location
1	Male	Resident	Village 1
2	Female	Widowed survivor	Village 1
3	Male	Resident	Village 1
4	Male	Local activist	City 1
5	Male	Resident	Village 2
6	Female	Resident	Village 2
7	Female	NGO Leader	City 1
8	Female	Resident	Village 2
9	Female	Resident	Village 3
10	Male	NGO Leader	City 1
11	Male	Resident	Village 2
12	Male	NGO Leader	City 1
13	Female	Widowed resident	Village 3
14	Female	Resident	Village 2
15	Female	Wife of village head	Village 5
16	Male	Disaster scholar	City 2
17	Male	Local activist	Village 4
18	Male	Resident	Village 4
19	Male	Local activist	City 1
20	Male	Resident	Village 1
21	Male	Disaster scholar	City 2
22	Female	Resident	Village 1
23	Male	Fisher	Village 1
24	Male	Scholar	City 1
25	Male	Resident	Village 1
26	Male	Resident	Village 1
27	Female	Resident	Village 1

Table 3: Summary of Village Characteristics

Village Designation	Hamlet / parish council	Level of damage	Recovery Outcome
1	Yes	High	Good
2	No	High	Poor
3	Yes	Moderate	Good
4	Yes	High	Good
5	Yes	Moderate	Good
6	No	High	Poor

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[1] I use the words hamlet and village interchangeably through the article. Typical villages in Tamil Nadu hold between 200 and 1200 people (Bavinck 2001); hamlets of this size are classified by the government of India census as Class VI villages.

[2] I traveled to the urban areas to meet with several NGO leaders and scholars who worked with tsunami-affected residents in villages in rural Tamil Nadu but had offices in nearby cities; these cities themselves are not the focus of the study.

[3] Communities where fishing is the core livelihood will elevate the caste of that demographic above other normally "higher castes." "Thus, in a fishing community, it is the Pattinavars who would be the dominant caste although the same village might have representatives of the higher castes like Brahmins" (Venkatesh Salagrama, personal communication 7/29/09). See also Srinivas (1987) for a full discussion of this phenemenon.

[4] A full description of India's caste system is beyond the scope of this article, but broadly, Dalits stand outside the standard four-tier caste system. They cannot marry those within the system and "are considered spiritually and physically unclean, and in the caste system must live in a separate colony, must use separate water and eating facilities, must never come in contact with caste Hindus, must call out an identifying greeting to ensure everyone knows they are 'untouchable' and must perform the tasks considered too unclean for caste Hindus to do. These jobs included removing carcasses of dead animals, working with leather, performing midwifery duties, cleaning toilets, giving news of death and working with particular metals" (Gill 2007: 20). See Mines (2009) for a full description of *jati* (caste) in historical and social context.