

Social Capital in Disaster :

From the Great East Japan Earthquake

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<Abstract>The Great East Japan Earthquake of March 11, 2011 revealed our unconscious behavior and thinking in daily life. The disaster consisted of earthquake, tsunami, and the accident of Fukushima Daiichi Nuclear Power Plant. We became aware of the importance of social capital in taking refuge within the community. In these situations the traditional or bonding social capital worked well. The measures devised to deal with this emergency by those who was doing the actual work was generally appropriate. But the decisions and measures made by the government was thrown into great confusion at that moment. Afterwards the volunteer and NPO activities by the citizens have been vitalized. This means the bridging social capital has emerging and spreading in Japan. On the other hand we made the questionnaire about the disaster prevention awareness in the central Tokyo before and after the Great Earthquake. We found the importance the mutual help in these emergencies. I presented the policies of promoting the trend for 'New Public' measures in Japan.

Keywords: Great East Japan Earthquake, bonding and bridging social capital, volunteerism, mutual help, disaster prevention awareness, 'New Public' measures

1 . People's Actions after the Great Earthquake

The disaster now known as the Great East Japan Earthquake that struck off the Pacific Coast of Northeast Japan on March 11, 2011 began with a large earthquake, which went on to trigger a tsunami with tremendous destructive power and plunge the Tokyo Electric Power Fukushima Dai-ichi nuclear reactor into an uncontrollable situation. The linkage between earthquakes and tsunamis was recognized both empirically (in history and literature) and ideologically (through seismology and physiography), but when it came to recognizing and imagining the disaster's

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scale and making instantaneous decisions about whether or not to evacuate, not only individual citizens and local communities but organizations as well (corporations, local governments, the national government) were forced to grope blindly for the proper response. Even if they had carried out a certain degree of advance planning, drills or simulations for this type of situation, in reality, not only were their disaster prevention manuals themselves insufficient, but very few places were able to act according to their manuals. In most workplaces, responses were either on an ad-hoc basis for one's own personal safety or limited to one's immediate department, for example. The circumstances were mostly the same within the government as well. In a typical example, a recent report (Jan. 24, 2012 discourse by Chief Cabinet Secretary Fujimura) revealed that the government has still not recorded written minutes of many of its meetings related to the great earthquake, not only immediately after the quake but even now, nearly a year later. This demonstrates the extent to which the government's decision-making and policy decisions concerning its response to the great earthquake have been carried out in a makeshift manner.

As such, when compared to how post-quake Japan's political and economic nerve centers or society overall is doing, the disaster-affected areas and victims appear to be acting in a relatively calm, collected way. Despite being placed in the blink of an eye into difficult circumstances, the disaster victims have not become enraged but instead have accepted their miserable lot and have in fact silently and straightforwardly endured their situation, even appearing as if they are waiting for time to pass. Based on this, there were some foreign media reports lauding Japanese people's behavior after the great earthquake.¹ A similar trend was visible at the time of the Kobe earthquake (Jan. 17, 1995), but this does not mean we can deem such modesty to be a characteristic of the Japanese people as a whole. When we do an international comparison of public opinion polls, we can see that Japanese tend to be reserved and vague to begin with in this type of emotional expression and the revealing of their intentions. It therefore seems necessary to deduct or account for this difference in tendencies. Still, on the whole, compared to the severity of the damage from the great earthquake, the actions of Japanese people -- particularly the people of the affected area of Tohoku -- and their discretion in expressing their emotions are of particular note. Yet no matter what, we must not interpret this systematic behavior to mean that the victims and the affected areas are gradually accepting their situation. We need to properly understand where the source of that behavior lies and why they behave that way. With that in mind, to understand this situation, I will discuss it using the concept of social capital.

2 . Differences in National Character

When Japanese people's communication with foreigners or local people does not proceed

¹ A dramatic contrast is the chaos in New Orleans, USA after Hurricane Katrina struck on August 29, 2005. For an analysis of that chaos, see Congleton (2006), and for a look at the problems involving risk management in times of political chaos, see Congleton (2005).

smoothly, either in day-to-day life or in particular when traveling overseas, many feel themselves to be particularly Japanese; in other words, they are aware of others' differences from Japanese people in terms of perception and actions. These differences are naturally reflected in countries' politics as well. Even if all countries faced the same policy issue, their citizens would have different ways of viewing things, and consequently, each country's political decisions and policies would differ. As a result, even if a country adopted the same policy toward several foreign countries, a cautious reading of how each country will likely respond would be necessary in advance. This is also why diplomatic strategies are necessary. Therefore, if we wish to study the national attitude and response in a comprehensive, scholarly way and not at the level of day-to-day feelings and impressions, such a study requires a deliberate design and a full-fledged effort that is both large-scale and long-term.

For example, Inoguchi and Blondel (2008) carried out a public opinion poll in 18 countries in Europe and Asia in the year 2000. The basic topic of study was the degree of people's "support for their country," and it was composed specifically of three elements: identity, feelings of trust and sense of satisfaction with life. Based on the results, the 18 Western and Asian countries were categorized into six groups. These were, namely, the countries of the "Happy Non Nationalists" (France, Germany, Spain and Sweden), the countries of the "Mild Pessimists" (Britain and Taiwan), the countries of the "Hesitating Citizens" (Japan and Indonesia), the countries of the "Frustrated Patriots" (Korea, Philippines, Italy, Portugal and Greece), the countries in "Happy Development" (Thailand and Ireland) and the countries of the "Optimists" (Malaysia, Singapore and China). In a word, the geographical proximity of countries did not have much effect. The East Asian region (Japan, China and the Korean peninsula), over centuries of interaction, is often seen in terms of tradition as a single region using a Chinese-based writing system and as having nearly identical, close relationships. But in terms of political culture and environment, they are not deemed to be in the same group. It can thus be reasoned that countries (including Japan, of course) must compose diplomatic strategies that take into account these sorts of differences.

In particular, the notable differences between Japan and its geographically near East Asian neighbor China are distilled in the word "inscrutability," uttered by University of Niigata Prefecture president Takashi Inoguchi in his keynote speech and panel discussion at a Senshu University Center for Social Capital Studies symposium (Dec. 3, 2011)².

3 . Background of Social Capital Theory's Emergence³

Let's take a look at how long ago the notion of social capital was first used and when this term came to be accepted in the academic sector and by the general public. There are several ways

² An overview of this symposium is recorded in *Senshu University, Center for Social Capital Studies Annual Report*, No. 3, 2012.

³ This section is based on Harada (2010).

to answer these questions. The term social capital gained recognition chiefly among sociologists in the 1980s. This recognition began with papers by Pierre Bourdieu, James S. Coleman and others that pointed out the existence and role of social capital. The advancement, accumulation and passing on to future generations of cultural capital were the basis for this position. However, social capital was not recognized by the general public until the impressive and sensational analysis of Putnam (1993) that was based on field work performed in Italy. Putnam concluded that the difference in social accumulation between northern and southern Italy caused differences in political performance and social stability. Northern Italy has a long tradition of a civil society dating back to the Middle Ages. As a result, there were spontaneous activities among citizens occurring horizontally as well as the spontaneous formation of groups. These events played a key role with regard to democracy. In other words, Putnam concluded that the accumulation of social capital consisting of trust, norms (reciprocity), networks and other elements is very important. This position generated a strong response. Putnam's statement prompted many people to attempt to devise indicators that can be used for social capital. One reason for doing so is that the concept of social capital and its associated indicators are useful for the analysis of civil societies and democracy in industrialized countries.⁴ Furthermore, there were hopes for producing useful perspectives and indicators for the analysis of developing countries as well as for the planning and execution of development plans in these countries. Initiatives from the mid-1990s to the early 2000s by organizations such as the OECD and the World Bank together with the Japan International Cooperation Agency (JICA) and studies like Japan's Cabinet Office Quality-of-Life Policy Bureau (2003) are all prime examples. These events demonstrate that at this stage, the concept of social capital was already utilized and perceived in an extremely policy-oriented context.⁵

The next question is why people came to believe that social capital could be useful for the analysis of developing countries. Examining this question by focusing on Asia reveals that this is the third stance that finally emerged following the previous two stages. The first stage is the belief that Asian society, economic structures and governing bodies have until recently been overwhelmingly determined by the region's natural environment (i.e., climate, geographic location) and have thus remained consistent over many years. In one way, this is a traditional and conventional concept. At the same time, though, we can say this has preserved the genial relationships among the people living in Asia. Watsuji (1935) explained early on that the lifestyles of people in East Asia are determined by fate because of the tropical monsoon climate in this region. In addition, he discussed the cultural, artistic and religious characteristics of this region. Gunnar Myrdal (1968) studied southern Asia with particular emphasis on India. He described the structural background for poverty in this region and provided an institutional

⁴ Many years ago, Jacobs (1961) studied the broken-down civil societies of decaying urban areas in the United States, reaching conclusions similar to those of Putnam (2000). This raised concerns about the decline of social capital.

⁵ For a useful overview of a variety of concepts, see Inaba (2011).

approach for ending this poverty.

The second stage is the search for the secrets behind East Asia's economic growth following World War II. The search began with studies of Japan, which was the first country in the region to recover and achieve economic growth. This marked the emergence of what have been called the Japanologists. Economic growth in Japan was followed by the start of growth in the four Asian tigers: Taiwan, Korea, Hong Kong and Singapore. The tigers were then subjected to the same type of analysis. The four tigers are very similar not only in terms of their climate but also in terms of family ties, religion, cultural values and other parameters. As a result, they share many social elements that are consistent with the pursuit of economic growth. This environment subsequently spread to all of Asia, leading to strong economic growth in the ASEAN region⁶, too. The remarkable economic growth in all of these Asian countries led to a string of scholarly attempts at that time to determine the secret behind the success of these countries. The views of the World Bank (1993) and Fukuyama (1995) were typical of the perception of Asian economic growth at that time.

Dramatic events subsequently brought us to the third stage. The 1997 currency crisis that entangled one Asian country after another triggered the advance to this stage. Ending the crisis required more than emergency financing from multinational agencies like the IMF and World Bank. A structural political response was also needed. For instance, in response to the Asian currency crisis, a group for regional cooperation was formed in 1997 by the ASEAN +3 (Japan, China and Korea) countries. This move created a new definition for international regional frameworks (ASEAN was initially formed as an organization to fight communism) created for the purposes of cooperation and solidarity in response to an actual situation. But merely supplying financial assistance was not enough to restore the economic and social structures of Asian countries suffering from the currency crisis. Money alone was not a lasting solution. The conclusion was reached that structural initiatives (not necessarily in the sense of reforms, but in the sense of policies aimed at the economic and social structure) were needed as well. In fact, the OECD, World Bank and other studies involving social capital took place during this period between the late 1990s and early 2000s. This is because there were limitations to the conventional approach (the types of actions in economics textbooks) of relying on macroeconomic policies to control national economies that these international agencies had been using. Consequently, these studies were performed at this time because there was a need for analysis and policy frameworks based on a more fundamental economic and social structure. At that time, there were hopes that the social capital concept would play a central role with regard to policies, too.⁷

⁶ ASEAN was formed in August 1967 by Southeast Asian countries to oppose communism. The original five members were Thailand, Indonesia, Singapore, the Philippines and Malaysia. There are now 10 member countries. In order of their populations, they are Indonesia, the Philippines, Vietnam, Thailand, Myanmar, Malaysia, Cambodia, Laos, Singapore and Brunei.

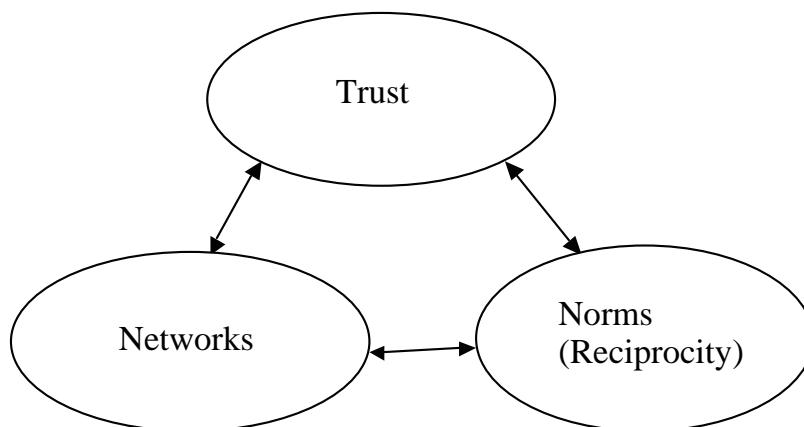
⁷ The paper by Miyagawa, Omori, eds. (2004) also contains that viewpoint.

The Kobe earthquake (1995) and the Great East Japan Earthquake (2011), when viewed in this context, can also be said to have provided momentum that elicited changes in the Japanese people's values or thresholds of consciousness. In Japan, too, we must leverage this situation as an opportunity to pursue changes in the orientation of policy frameworks.

4 . What is Social Capital?⁸

Social capital is typically understood as consisting of three factors: trust, norms (reciprocity) and networks in Figure 1. And in order to understand it in quantitative terms, it is necessary to develop indices of some sort. Specifically, variables that apply to each of those factors must be selected and specified. One way to do that is to use various kinds of statistical data that have already been aggregated and compiled, and apply them as proxy indicators for these three factors. But another way is to collect data through questionnaire studies and the like. For example, one could ask questions such as, for trust, "Do you feel you can trust most people?" or "Whom do you consult first about things that worry you?"; for norms (reciprocity), "Do you always go to vote?" or "Have you ever failed to acknowledge or reciprocate an act of kindness?"; and for networking, "Do you have a lot of friends and acquaintances?" or "Do you have experience doing volunteer activities?" Various kinds of questionnaire studies and analyses have been done that also incorporate "face sheet" information showing the attributes of respondents.

Figure 1 Components of Social Capital (Illustration)



What do the social capital indicators captured this way indicate? Putnam (1993) says they indicate the maturity of civil society. Summarizing the concept of social capital, which consists of multifaceted factors, into one-dimensional measurements has the advantage of simplifying

⁸ This analysis is based on Harada (2011).

the discussion. Of course, the indicators themselves do not equate in simple terms to things like the level of economic standards or economic growth. But the advantage conferred by compiling social capital into homogenous indicators is at the same time a disadvantage as well. Basically, the social capital concept itself emerged as a contention designed to overcome the limitations of indicators that express economic scale in the aggregate, such as GNP. And as such, a homogenous indicator of social capital is in a sense logically inconsistent. We can portray this relationship in Figure 2 (Single-line Indicator of Degree of Civil Society) and Figure 3 (Composite Indicator of Degree of Civil Society). Figure 2 shows, as it were, the indicators typical of Putnam (1993), while Figure 3 represents the position of this paper (the author).

Figure 2 Single-line Indicator of Degree of Civil Society

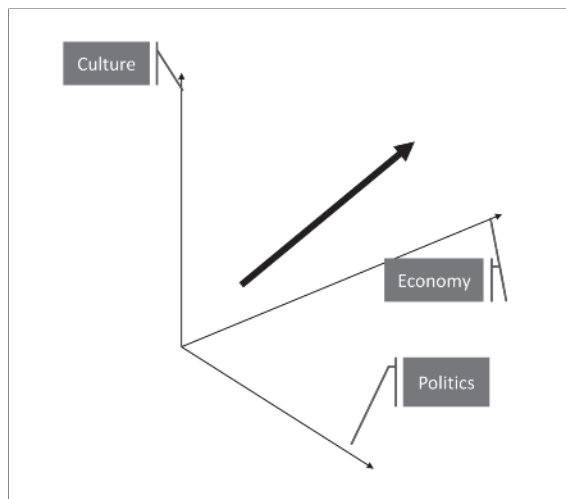
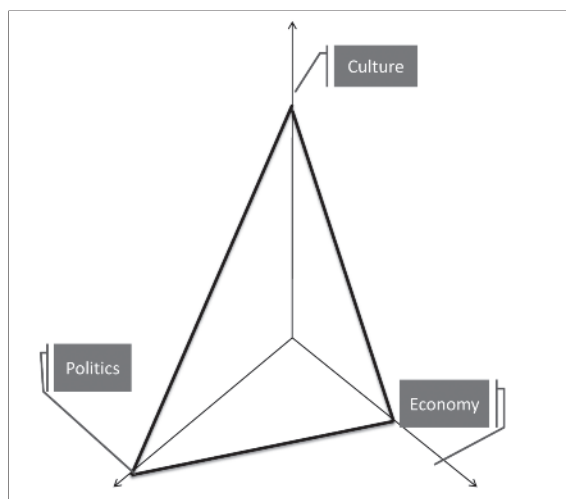


Figure 3 Composite Indicator of Degree of Civil Society



The concept of social capital has a broad perspective to begin with that accommodates approaches that mix bonding and bridging types of social capital. It also accommodates both traditional factors rooted in family, relatives and community life as well as modern factors favoring logical contractual relations like economic transactions. Because people's lives are a mix of these kinds of factors in the first place, the primary aim here is to acknowledge that complexity and to try to measure social capital in an inclusive and comprehensive way.

The surge in volunteer activities by individual citizens in the wake of the Kobe earthquake led to an expansion in the frameworks of authorized NPOs and proposals for a "new public." In other words, a bridging type of social capital gained recognition. On the other hand, the victims and the disaster-affected areas of the Great East Japan Earthquake brought about a renewed realization of the strength of the traditional bonding type of social capital. At the same time, however, many people (both in Japan and abroad) have extended a helping hand to the affected areas and victims in these difficult circumstances out of feelings of "bonds and solidarity," without expecting a direct reward. This represents an opportunity to take a second look at feelings of sympathy and compassion toward other people, which had nearly been lost in the process of economic growth and prosperity. This may presage further development and expansion of the concept of social capital and what it covers.

5 . Characteristics of Social Capital in the Disaster-Affected Area

One characteristic of social capital that came to light with the Great East Japan Earthquake was how robust the connections between people are in the communities of the relevant area. Consequently, the advantages of traditional bonding style solidarity came under reconsideration. The issue is how that can be developed moving forward.

In the areas affected by this disaster, population decline and the aging of society had been progressing more rapidly and prominently than in other areas to begin with. That had led to sluggishness in local industry and business and had held back progress in employment among young adults. Essentially, as a whole, the area had fallen into a negative spiral. Under these circumstances, even the information put out from the local areas had become routine and obsolete due to the aging of those putting out the information, and the freshness of the information itself had declined, with the result that it lacked appeal overall. In other words, there was a limit to information originating from the local areas. However, while it was an unfortunate catalyst, the great earthquake drew citizens' attention to the affected areas. Moreover, it led a considerably large number of young people who had no previous connection to volunteer activities to start getting involved in them. There are even reports of a considerable rebound among young people in interest and desire with respect to their local areas or hometowns (rural areas) or family and marriage, which had been seen as the epitome of sentimental human relationships. That in itself is somewhat of a reverse phenomenon that has occurred unexpectedly. Perhaps we should take advantage of this opportunity to transform the social concerns of present-day Japan, which has been troubled by its falling birth rate and aging population in the context of globalization, and to strengthen the "bonds and solidarity" of society

overall.

The following are some possible specific strategies for using social capital. One characteristic of the social capital observed in the disaster-affected area (Pacific Coast of Northeast Japan) is that, rather than being oriented toward economic growth, it excelled at the alleviation of damage and other external factors (disaster reduction) and the ability to rebuild (resilience).⁹ This was already an area with a harsh natural environment and living conditions, and its people coped with external foes in cooperation with their family, community, or workplace. In sum, the lifestyles of the area's people were already based on "bonds and solidarity." And naturally a lifestyle emphasizing the traditional bonding type of social capital will likely continue here as well. There is no need to deny this. However, this great earthquake presents an opportunity to bring an additional factor into play.

That factor is the trend in which people outside the affected area (both old and young, male and female) who have become aware of the "bonds and solidarity" mentality are providing aid to the area. First of all, the volunteer activities in the affected area continue to shore up the local people's lives and motivation, even if less so now than immediately after the disaster. In addition, even when direct actions are not involved, messages of concern and sympathy for the affected area are important. Basically, it is necessary to maintain an environment that enables the victims to feel that they are not alone. So when we categorize the support for victims and the affected area as self-help, mutual assistance and public assistance types of relief measures, the role of mutual assistance backed by emotional support is extremely important.¹⁰

Obviously, under the circumstances immediately following a disaster, one may not find another person to rely on, so "self-help" involves consciously preparing oneself on a regular basis in order to be able to cope with such a situation. "Public assistance" refers to the setting in place of laws or equivalent arrangements to cope with future contingencies, with the aim of their permanent institutionalization. However, in order to shift suddenly to this phase, substantial hurdles must be cleared in advance to gain the consent of the people. As a preliminary step, the role of "mutual assistance" is necessary as a sort of social experiment. A fundamental prerequisite of mutual assistance is for individuals, organizations or communities to work autonomously. In other words, it cannot be forced. Therefore, to promote this aspect, there must be an arrangement that provides those on the supporting side with some sort of preferential treatment in terms of taxes and finances, for example. Obviously, a set-up for socially rewarding and praising this mutual assistance is also essential. At the point that these mutual assistance activities catch on and assimilate socially, they could either become subject to public assistance or, to the contrary, potentially have their associated preferential treatment lifted.

⁹ For the need and importance of perceiving the issue of disaster prevention not only in terms of equipment from a physical, engineering view but from the standpoint of disaster reduction and resilience, see Oyane, Urano, Tanaka and Yoshii (eds.) (2007) and Oyane (2010).

¹⁰ For economic policies regarding self-help, mutual assistance and public assistance, see Kishi, Shima, Asano and Tachihara (2011).

6 . Efforts Aimed at Disaster Reduction

The Great East Japan Earthquake inflicted tremendous damage on the Pacific Coast of Northeast Japan. Among other things, with regard to the cleanup of the thoroughly destroyed Tokyo Electric Power Fukushima Dai-ichi nuclear reactor, even for just the reactor itself, an astounding number of problems and challenges remain unresolved. But the great earthquake revealed several problems that had not come to light before then, and it also presented an opportunity to reconsider them. Some typical examples are people's awareness with regard to large-scale natural disasters and disaster prevention, as well as their evacuation actions. The quake has triggered a major change in at least people's mindset regarding efforts, from awareness on an individual level to disaster prevention measures and response by organizations and groups, all the way to disaster prevention planning and implementation by local and national government bodies.

Among those involved in disaster prevention, there has been a shared awareness for quite some time now that physical equipment and facilities are not enough for effective disaster prevention.¹¹ For example, in the Hokkaido Nansei-oki Earthquake (July 12, 1993) in which a tsunami ravaged Okushiri Island and in the Kobe earthquake (Jan. 17, 1995) that shook the major city of Kobe, aside from the significant scale and destructive power of the natural disasters, a wide variety of issues and problems were revealed in the rescue, recovery and reconstruction processes. One example is that preparations that focus on physical equipment alone have physical, technical and financial limits. Let's assume that the requests of those involved in the disaster-affected area are answered immediately after the disaster. Even so, in the course of 5 or 10 years, with the generational shift and changing household situations in the affected area, the inclinations and concerns of those involved may change, and there is a risk that this kind of physical equipment will become a white elephant -- expensive and useless. Basically, rather than setting in place disaster prevention equipment in a way that directly meets the needs of the disaster-affected area and its victims at that point in time, what is needed are disaster reduction efforts over an intermediate time span based on an understanding of the occurrence of a natural disaster itself as a probability event.

Specific efforts for disaster reduction require a combination of self-help, mutual assistance and public assistance.¹² As for self-help, at the moment a large-scale natural disaster strikes, first of all each individual person, family, organization or office, for example, must make decisions individually and autonomously aimed at getting themselves and their own lives out of danger. When it comes to decisions at that moment and specific guidelines for action, regular drills and simulations are effective, but in the end every individual also needs an awareness that they themselves are the one they need to depend on. Next, as for mutual assistance, what is decisively important is the formation and maintenance of tight networks based on regular information sharing and collaborative relationships. Some examples are neighborly cooperation

¹¹ For examples, see Oyane (2010) and Kawata (2010).

¹² See, for example, Inaba (2011) and Kishi, Shima, Asano and Tachihara (2011).

in communities and tie-ups between organizations. Basically, this refers to verifying and supplementing one's network of contacts through communicating with one's neighbors and conducting regular evacuation drills. Lastly, those responsible for public assistance are the city hall, police, firefighters, hospitals and other public institutions. Based on basic guidelines for action as fair, neutral public officials, these public institutions can act at a natural disaster site with the backing of organizational power, technical power and funding. By doing so, they can shore up disaster victims' lives. The central government is also essential and important as a last resort in terms of providing people with guidelines for action and giving them a sense of reassurance. But there is a sense of distance, to a certain degree, from the natural disaster site. The problem is that since these public institutions are public entities (funded by tax money), decision-making often requires a great deal of time and procedures. While it depends on the scale and degree of the natural disaster, there are some situations in which public institutions are ridiculed for "trying to work during an emergency according to the rules and practices of ordinary times."¹³ For the public assistance portion, partly because its procedures are complicated, it inevitably takes time to reach decisions and mobilize. But once it gets into motion, it is able to contribute a substantial amount of material.

Next we will look at how to combine these kinds of self-help, mutual assistance and public assistance for everyday disaster prevention activities, based on a specific questionnaire study.

7. The Relationship among Self-help, Mutual Assistance, Public Assistance and Social Capital¹⁴

At the Senshu University Center for Social Capital Studies chaired by me, we conducted a study in 2010 and 2011 about autonomous disaster prevention awareness among residents of Tokyo's Shinjuku ward. As for the subjects of the studies, in each of the 2 years we distributed and collected questionnaires using neighborhood associations and community associations as our base. We explained that the questionnaire study was "being conducted to understand the true state of local disaster prevention activities, at a time when they are said to often get backlogged due to aging and anonymity in big cities." The specific questions consisted of ① questions about local disaster prevention activities (Q1~Q14), ② questions about feelings toward society (Q15~Q20) and ③ questions about the respondents themselves (a so-called "face sheet") (F1~F10).

The collection rates were 27.6% (when conducted in Sept. 2010 in four areas on the ward's eastern side), and 28.1% (when conducted in Aug. 2011 in six areas on the ward's western side). In a curious coincidence, the Great East Japan Earthquake occurred in the period between the two questionnaires. Yet while one would expect this to drive the collection rate higher for the second questionnaire, there was not a very notable difference in the two. This could reflect

¹³ This sort of comments (criticism) arose with regard to the Great East Japan Earthquake. See also Hayashi (2011).

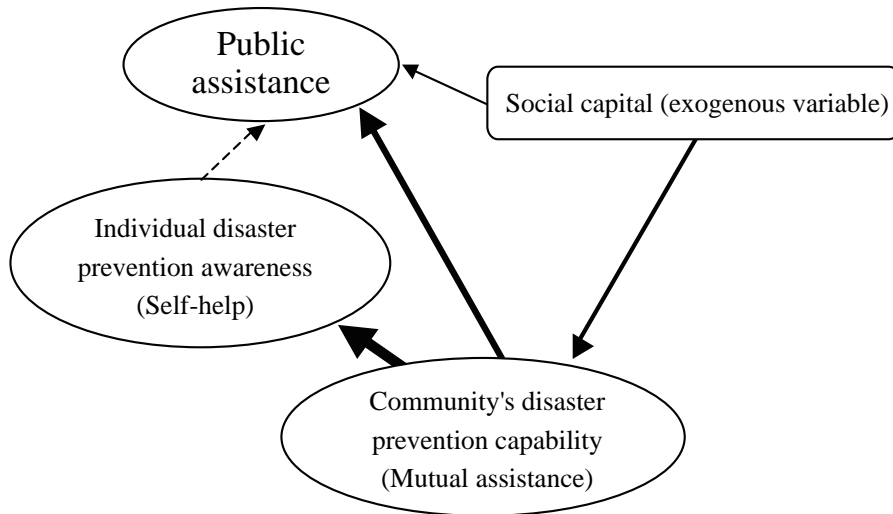
¹⁴ Details should be referred to Marumo (2012).

differences between the two areas (the four eastern areas of the ward and the six western areas of the ward). For example, of those responding to the questionnaire, people who had lived there 30 years or more accounted for 74% in the four eastern areas but only 69% in the six western areas. Also, the ratio of respondents age 60 or older was 70% in the four eastern areas but only 66% in the six western areas¹⁵. Essentially, in this study, the respondents' age and length of residence were greater for those in the four eastern areas than for those in the six western areas. As a result, it is possible that the experience of the Great East Japan Earthquake (despite possibly increasing disaster prevention awareness in general) had relatively less of an impact on (and thus failed to generate greater response from) younger respondents. Therefore, it did not lead to a higher collection rate. And since the questionnaire was not conducted on identical subjects, it has some limiting conditions. Nevertheless, it does enable us to read the true state of how Shinjuku residents feel on a day-to-day basis about autonomous disaster prevention activities.

First, Shinjuku residents' basic structure of consciousness with regard to disaster prevention looks like what you see in Figure 4. Self-help (individuals' disaster prevention awareness), mutual assistance (a community's disaster prevention capability) and public assistance (city hall, police, firefighters, hospitals) are all mutually related (they influence each other). But these relationships are not necessarily positive. To give a typical example, when self-help increases, the degree of dependence on public assistance declines (a negative relationship). But mutual assistance has a positive influence on both self-help and public assistance. Generally speaking, in the structure of these three items (self-help, mutual assistance and public assistance) the influence of mutual assistance is quite large. The degree of influence is expressed by the thickness of the directional line. A thick directional line indicates that the degree of influence is high. Based on this relational figure, we can see that mutual assistance plays a central role. In particular, it exerts a stronger influence over self-help than over public assistance. As mutual assistance increases, self-help also increases, and this has a large ripple effect on public assistance.

¹⁵ Also, since the questionnaires were conducted through the ward's neighborhood associations (community associations) by those associations' directors, the respondents are slightly skewed toward an older age group.

Figure 4 Residents' Structure of Consciousness Regarding Disaster Prevention (Illustration)



(Note) → marks a positive influence, - - - → marks a negative influence, and the line's thickness shows the degree of influence.

(Source) Created by the author based on a paper by Marumo (2012).

What kind of influence does social capital have on this structure of consciousness? The indicators for social capital here consist of the two items "Trust in society" and "Trust while traveling." The specific questions asked were: for Q15 "Trust in society," "Do you think that people in general can be trusted?" and for Q16 "Trust while traveling," "Then how about the people you meet while traveling or in an unfamiliar place?" Both of these are basically standardized questions in this type of questionnaire about social capital. In this covariance structure analysis, social capital becomes basically an exogenous variable and a factor that influences self-help, mutual assistance and public assistance. But with regard to the path for that influence, at least based on this study alone, it was confirmed to have an influence on mutual assistance and public assistance, but not on self-help.

8 . Changes after the Great East Japan Earthquake¹⁶

In the study carried out in August 2011 asking Shinjuku ward residents (in the six western areas) about disaster prevention awareness, a new question was added. Q4 asked about the "person(s) or organization(s) you rely on in a major natural disaster." As the Great East Japan Earthquake happened in between the first round of the study (Sept. 2010) and the second round (Aug. 2011), we had them answer about their awareness at each of those points in time using a 5-step

¹⁶ The detailed analysis in the first half of this section is reported in Marumo (2012).

assessment (with 5 as the highest and 1 as the lowest). However, the subjects and respondents of this study were only the residents of the six western areas of Shinjuku ward.

The results showed the average values for the degree of trust before the Great East Japan Earthquake to be ①Family (4.333), ②Self-Defense Forces (3.880), ③Police and firefighters (3.731), ④Hospitals (3.648) and ⑤Ward association for disaster prevention (3.529). These values after the Great East Japan Earthquake were ①Family (4.358), ②Self Defense Forces (4.165), ③Police and firefighters (3.787), ④Hospitals (3.673) and ⑤Ward association for disaster prevention (3.627). Thus the order of the average values before and after the great earthquake did not change. However, the degree of trust in these people and organizations increased on the whole. Yet there is quite a bit of variation in how they increased. The average value of the degree of trust increased the most for the Self Defense Forces (+ 0.285), followed by Ward association for disaster prevention (+ 0.098), Police and firefighters (+ 0.056), and then Family and Hospitals (both +0.025).

When a t-test was conducted to determine whether these changes (variances) in average value were statistically significant or not, the following were found to be significant: ①Trust in people in neighborhood, ②Trust in relatives, ③Trust in friends and acquaintances, ④Trust in coworkers, ⑤Trust in ward associations for disaster prevention, ⑥Trust in firefighting crews, ⑦Trust in volunteers and NPOs, ⑧Trust in police and firefighters, ⑨Trust in Tokyo city and ward offices and ⑩Trust in Self Defense Forces. Therefore, at least based on this study alone, while the average values for trust in Family and Hospitals rose (although by the smallest degree), these increases cannot be considered statistically significant.

As for how to interpret these study results, on the whole, it is true that the steady accumulation of social capital in daily life plays an important role in this sort of major disaster. Specifically, it is clear from Figure 4 as well that the role of mutual assistance (the community's disaster prevention capability) is decisive. Nevertheless, as self-help (individual disaster prevention awareness) functions increase, reliance on public assistance naturally declines. Can the decline in reliance on public assistance and the increase in the degree of trust in public organizations and institutions both stand as valid arguments? The key to understanding that is probably the fact that "reliance on" and "trust in" public institutions are points that should be separated. In other words, excessive reliance on public institutions means a situation in which an individual resident's daily life is in a sense contingent on the whim of public institutions. On the other hand, perhaps people trust public institutions in the event that they have confirmed that public institutions' action principles or actual operations have been fair and neutral. Since immediately after this recent great earthquake, public institutions as exemplified by the Self Defense Forces and others have engaged continuously in dedicated efforts both on an organizational and individual basis (in on-site capability as well). This probably led to such an assessment (trust from citizens).

However, this cannot be considered as an opportunity for a (repeated) broadening of the public sector's sphere of activity. Peacock and Wiseman (1961) once analyzed the historical trend of financial expansion in England from the latter half of the 19th century to the mid-20th

century and argued that when the public encounters an event such as a war or a disaster, they accept the increase in expenses to withstand the national crisis (= increased burden) and get used to that standard even after the event has passed. In other words, they argue that a national crisis acts to change the level of the people's threshold. Taking a cue from that, it is not unimaginable that Japan may see an expansion in financial scale and structure in the near future as well¹⁷. But once we take into account the drastic alteration of the energy problem (the shift toward policies that reduce reliance on nuclear power), the Great East Japan Earthquake does not have the leeway it needs to bring about this change (expansion) in the financial structure.

The changes already occurring in values hint at shifts in people's assessment of their life and work and in their allocation of time to each. The change that will quietly come in the level of the people's threshold after the Great East Japan Earthquake surely forebodes a change in the relationship between public (official) and personal (citizen). We hear that there have been a substantial number of requests since the great earthquake for things like a "hometown tax system," which has been used only rarely. On emerging volunteer activities, the bridging type of social capital has already prevailed in the Japanese.

9 . Toward Altering the Policy-making Process

Judging from this study, a combination of self-help, mutual assistance and public assistance is essential from the standpoint of disaster prevention or disaster reduction. Specifically, the role of mutual assistance is important. The question arises, then, of how to employ risk management to cope with this kind of large-scale natural disaster. As Olson (1982) points out, this kind of opportunity, which reoccurs about once every 100 years, can be seen as a chance to unavoidably alter the existing structure of vested interests. Even if we look back over Japan's history, some say it is comparable to the war defeat in 1945 or the Meiji Restoration in 1868. However, both of those events were caused by people or organizations acting on their own initiative. In that aspect, it is comparable to the French Revolution and the Russian Revolution. With that in mind, it may be necessary to view this kind of alteration in such vested interests as a distinctive by-product of an undeniable historic turning point. However, come to think of it, being drawn to an opportunity to modify existing vested interests as a way to justify the many lives that have forcibly and overwhelmingly been ripped apart by a large-scale natural disaster is probably a merciless corollary. Perhaps the problem lies in the lack of systematic, political preparations to cope in the short, intermediate and long term with this sort of sudden, large-scale state of emergency occurring on a national scale.

So from what standpoint should we proceed with such preparations? Our proposal for that is to emphasize the accumulation of social capital in order to promote effective mutual

¹⁷ The "Comprehensive Reform of Social Security and Tax" framework being promoted since the latter half of 2011 by Prime Minister Noda's DPJ administration contains in part a raise in consumption tax and thus aspires toward financial expansion.

assistance, in particular. In other words, we must not ignore the accumulation of social capital in each different community and association, or force a new kind of day-to-day life independently of people's experiences thus far. Of course, that does not mean to imply that we should carry on with the existing, rigid structure of vested interests in its totality. The point is that, even within social capital, we should develop a policy system geared toward strengthening not only the bonding type of social capital that we subconsciously embody and repeat, but also the bridging type in which people consciously broaden their perspectives in an expansive way.

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