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# Cascading as a Social Process in Highly Infrastructure-mediated Societies

*Tadahito YAMAMOTO*

## WORKSHOP AND SPECIAL ISSUE

The Study Group on Infrastructure and Society (SGIS) held a workshop entitled “Understanding the 2011 Disaster in Japan: Crisis, Resilience and Emerging Regime” on January 24, 2012 at Hitotsubashi University. The guest speaker was Stephen Graham, Professor of Cities and Society at Newcastle University, who published *Disrupted Cities: When Infrastructure Fails* (Graham ed. 2010) and developed methods and theoretical frameworks of sociological analyses on the interrelationship between infrastructure disruption and social change in modern urbanized society. During the workshop, following an introduction by the organizer, Takashi Machimura, and opening remarks by Graham, there were seven presentations by the members of the study group on “the 2011 disaster” in Japan.

The workshop consisted of three sessions. The articles in this issue are elaborated versions of the presentations made during the first and third sessions, “Different Faces of Post-disaster Situation, and “The Impacts of Disaster: Changed and Unchanged,” respectively.

The second session, “City Life and Disruption of Infrastructure,” is supposed to be published in the forthcoming DIS No. 4. The main concern of this special issue is to observe and verify the “cascading social process” caused by the 2011 earthquake, tsunami, and Fukushima nuclear accident. Therefore, it is said that the issue is a follow-up on “The Great East Japan Earthquake Chronicle,” which listed many of the

events that occurred during the two months after the disaster (see DIS No.1).

“Cascading” is one of the main concepts in Graham’s analyses on characteristic processes of infrastructure disruption in contemporary society. Graham says, “[B]ecause infrastructures that are usually considered separate are actually woven together in all sorts of mutually dependent ways—as with the Internet/electricity example already discussed—disruptions to one infrastructure quickly cascade through other systems in unpredictable ways” (Graham, in this issue). Importantly and paradoxically, the more modernized societies are urbanized and dependent upon a complex system of infrastructures, the more cascading-type social processes become increasingly “normal.”<sup>1</sup> In addition, Graham indicates that, according to Richard Little, large scale, cascading infrastructure failures can have many “orders” of effects (Little 2010: Graham, in this issue). Disruption in one place is mediated through several “orders” and can reach larger, more structural levels of social change. Cascading is a key perspective in the understanding of such whole processes caused by infrastructure disruption in modern urbanized, unstably structured societies.

The second point relates to “Infrastructural Perspectives,” which aims to reintroduce a material/spatial dimension into social analysis in the era of post-growth-oriented developmentalism. During the 20th century, a large number of infrastructures were embedded inside national territory and have formed the spatial regime of social geography, which was an indispensable but “blackboxed” condition of high economic growth in post-war Japan. It was not only an economic matter

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but also a political resource to make “periphery” subordinate to “center” in the nation.

However, with the decline of the Fordist-type developmentalism and dynamic waves of technological innovation, such economic, political, and spatial regimes of a post-war society are forced to change structurally. Drastic disruptions in existing infrastructure systems can develop into crises of economic activities, social institutions, and cultural orders of society. On the other hand, reorganization of infrastructure in the proper directions can create moments for reconstructing the material/spatial condition of peoples’ subsistence and reinventing new types of collective subjectivities in today’s highly infrastructure-mediated society. The introduction by Takashi Machimura and opening remarks by Stephen Graham present basic concerns and key theoretical perspectives of this issue. The following two articles (originally presented during Session 1 of the workshop) explain how the chain processes following the disaster affected the local society in northeast Japan. Tadahito Yamamoto’s piece is on assistance networks in the tsunami-stricken area of Iwate Sanriku Coast, and Akihiko Sato’s piece is on forced evacuation from Iitate village in the Fukushima prefecture polluted by radioactivity from the disrupted Fukushima Daiichi Nuclear Power Plant. The subsequent three articles (presented in Session 3 of the workshop) explain how such cascading and interconnected impacts on local society caused reinterventions from society with various geographical scales. Keisuke Mori discusses the mobilization of the Japanese Self Defense Force and US Navy in “Tomodachi (Friend)” Operation. Keiichi Satoh discusses the social movement in Tokyo in favor of a referendum to stop the reopening of the temporarily shut nuclear power plants around the country. Finally, Masao Maruyama discusses reconstruction politics and the future of developmentalism in the northwest region in a case study of the Ofunato city, Iwate Sanriku area.

## RESEARCH

After the Fukushima nuclear accident, the Tokyo metropolitan region experienced large scale rolling blackouts from March 14th–28th, 2011 for the first time since just after World War II . With a crisis of direct pollution by radioactivity, this brought with it unexpected and sudden psychologically traumatic events that severely disrupted ordinary life in Tokyo; it forced urban residents to rethink the relationship between “center” and “periphery” which was forced to place risky facilities through post-war developmentalism.

Sunmee Kim’s group conducted a questionnaire survey about the effects of the rolling blackout and peoples’ reactions on the streets of Kunitachi, a suburban city of west Tokyo, during November–December 2011. Kim’s report is the result of this questionnaire.

## Notes

1 Graham discusses this with reference to the concept “normal accident” by Charles Perrow (Perrow 1984).

## References

- Graham, Stephen (ed.), 2010, *Disrupted Cities: When Infrastructure Fails*, Routledge.
- Little, Richard G., 2010, “Managing the Risk of Cascading Failure in Complex Urban Infrastructures,” Graham, S. (ed.), *Disrupted Cities: When Infrastructure Fails*, Routledge.
- Perrow, Charles, 1984, *Normal Accidents: Living with High-Risk Technology*, Basic Books.

**Study Group on Infrastructure and Society Workshop**

# Understanding the 2011 Disaster in Japan: Crisis, Resilience and Emerging Regime

24 January 2012 (Tue), Hitotsubashi University

## Program



### Introduction

*Takashi MACHIMURA*

### Opening Remarks (via Skype)

Disrupted Cities: Infrastructure Disruptions and the Logic of Cities

*Stephen GRAHAM*

### Session 1 Different Faces of Post-disaster Situations

Tsunami Disaster and Organized Networks of Assistance in Japan: A Case of Sanriku Area

*Tadahito YAMAMOTO*

Different Faces of Post-disaster Situations: The Case of Nuclear Crisis; Based on a Case Study of Iitate Village

*Akihiko SATO*

### Session 2 City Life and Disruption of Infrastructure

Making a Chronicle of the Great East Japan Earthquake: Toward a Representation of the Spread and Depth of the Impact of Disasters

*Takefumi UEDA*

Breakdown of Infrastructures and Urban Disconnection: Tokyo in Post-quake Chaos

*Junko UENO*

### Session 3 The Impacts of Disaster: Changed and Unchanged

Disaster and Military: Trajectory of Disaster Dispatch of the SDF and US Forces

*Keisuke MORI*

Anti-nuclear Social Movements after the Fukushima Accident: Similarities and Differences with the “New Wave” in the Late 1980s

*Keiichi SATOH*

Changes of Local Regime after 3/11?: Developmentalism, Neoliberalism, and Regional Reconstruction after the Tsunami

*Masao MARUYAMA*