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**Article (Accepted version)
(Refereed)**

Original citation: Hunter, Janet (2015) *Earthquakes in Japan: a review article*. [Modern Asian Studies](#), 50 (1). pp. 415-435. ISSN 0026-749X

DOI: [10.1017/S0026749X15000219](https://doi.org/10.1017/S0026749X15000219)

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This version available at: <http://eprints.lse.ac.uk/62495/>

Available in LSE Research Online: February 2016

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Earthquakes in Japan: a Review Article*

Short Title: Earthquakes in Japan

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Seismic Japan: the Long History and Continuing Legacy of the Ansei Edo Earthquake. By GREGORY SMITS. Honolulu: University of Hawai'i Press, 2013, pp.x, 262. (ISBN 978-0-8248-3817-1)

The Great Kantō Earthquake and the Chimera of National Reconstruction in Japan. By J.CHARLES SCHENKING. New York: Columbia University Press, 2013, pp.xxii, 374. (ISBN 978-0-231-16218-0)

3.11 Disaster and Change in Japan. By RICHARD J. SAMUELS. Ithaca & London: Cornell University Press, 2013, pp.xv, 274. (ISBN 978-0-8014-5200-0)

Abstract

This review examines three monographs that make conspicuous contributions to our understanding of major earthquake disasters in Japan from the mid-nineteenth century through to 2011. They focus on different events and different time periods, and ask different questions, but raise a host of shared issues relating to the ongoing importance of disaster in Japan's history over the long term. They cause us to consider how seismic disaster is explained, understood, interpreted and actualised in people's lives, how the risks are factored in and how people respond to both immediate crisis and longer term consequences. One recurrent issue in these volumes is the extent to which these large natural disasters have the capacity to change, and actually do change, the ways in which societies organise themselves. In some cases disaster may be perceived as opportunity, but the evidence overwhelmingly suggests that a desire to return to the previous 'normality' is a powerful impulse in people's responses to major natural disasters. The review also argues that the issue of trust lies at the core of both individual and collective responses. A lack of trust may be most conspicuous in attitudes to government and elites, but is also inherent in more everyday personal interactions and market transactions in the immediate aftermath of disaster.

* I am grateful to two anonymous reviewers of this piece for their constructive comments. My thinking on earthquakes in Japan has also been shaped by discussions at a number of seminars and presentations, and I am grateful to all participants in those discussions.

Introduction

As repeated recent events have shown, while seismologists are increasingly able to explain the causes of seismic activity, it remains impossible to predict earthquake events with any accuracy. Even scientific explanation of earthquakes, moreover, is of very recent origin. In the absence of both understanding and prediction of seismic events it is easy to see why in ancient and pre-modern texts disasters in general were interpreted as manifestations of divine punishment for the moral failings of humans. This lack of scientific explanation has led through history to people across the globe viewing earthquakes as acts of retribution for the evils of human society, and as signals that fundamental change was needed. More surprising, perhaps, was the statement made by Ishihara Shintarō, the Governor of Tokyo, following the very recent catastrophe of March, 2011, that the disaster was a divine punishment (*tenbatsu*) for the egoism that characterised much of Japanese society and politics.¹ While Ishihara subsequently apologised for his statement, his ill-judged remarks highlighted a persistent need to explain and interpret uncontrollable events of this kind, as well as to utilise them to articulate particular opinions and views. It is not just the disaster itself, therefore, that is crucial to a greater understanding of such events, but also the narrative and manipulation of that disaster. It is in that context that the three books reviewed here all combine empirical accounts of their respective disasters with in-depth consideration of how they were explained, interpreted, represented and utilised for a range of different agendas.

This review will commence by outlining and evaluating the content of the three volumes under consideration. I will then go on to consider two common themes that emerge from the authors' analyses, themes that transcend the wide-ranging economic, political and social transformations that have characterised Japan over the last century and a half. One is the extent to which these 'unprecedented' disasters do, or do not, bring about lasting change. The other is the crisis of trust that these disasters generate at all levels of society, particularly in relation to government and other elites.

1855 to 2011: the Three Disasters

Gregory Smits has already written in some detail about the significance of the catfish prints associated with disasters in the late Edo period,² but analysis focussed on this visual evidence has now been integrated into a much bigger story of what the 1855 Ansei Edo earthquake, which resulted in major physical destruction in the nation's political capital, meant for Japanese society.³ *Seismic Japan* is particularly concerned with the narrative of that disaster, and its focus on understanding earthquakes in their social and cultural context inevitably means that analysis of this single event has to be embedded in a longer timescale. The book is, therefore, much more than the account of a one-off event. Chapters 2 and 3 focus on the pre-1855 historical background, first outlining the Edo period evolution of scientific thought and cosmology, in which the *yin-yang* concept of imbalance took precedence over, but overlapped with, Buddhist and Western ideas concerning earthquakes. Smits shows how earthquakes helped shape the social and imaginative contours of a Japan in which there was a lack of clear boundaries between natural and social

¹ Reported in <http://www.theguardian.com/world/2011/mar/15/tokyo-governor-tsunami-punishment> [Accessed 21/10/2013].

² Eg. Smits, G. (2006). Shaking Up Japan: Edo Society and the 1855 Catfish Picture Prints, *Journal of Social History*, **39**: 4, 1045-1077; Smits, G. (2009). Warding off Calamity in Japan: a Comparison of the 1855 Catfish Prints and the 1862 Measles Prints, *East Asian Science, Technology, and Medicine* **30**, 9-31; Smits, G. (2012). Conduits of Power: What the Origins of Japan's Earthquake Catfish Reveal about Religious Geography, *Japan Review*, **24**, 41-65. Gennifer Weisenfeld's 2012 book *Imaging Disaster: Tokyo and the Visual Culture of Japan's Great Earthquake of 1923* (University of California Press, Berkeley CA) similarly focusses on visual representations of this kind.

³ The centre of political rule in Japan in the early modern period was the city of Edo, renamed Tokyo after the Meiji Restoration of 1868. Ansei referred to the era name (*nengō*) covering the years c.1854-1860 in the Western calendar.

phenomena. Earthquakes were strongly linked with alleged moral failings in society, while the 1800s also witnessed a growing media sensationalism in the reporting and depiction of earthquakes. Against this background the author argues convincingly that the event itself 'played a pivotal role in a process of shaping conceptions of Japan in the realms of politics, religion, geography and natural science' (p.4).

Many details of the Ansei Edo earthquake that struck the capital on 11 November 1855 remain unclear, but 8-10,000 people are estimated to have died, and the destruction of many storehouses and the Shin-Yoshiwara entertainment district showed the capacity of the disaster to affect both the advantaged and the less advantaged. Smits' discussion looks both at the practical response in the immediate aftermath of the disaster, and the ways in which people made sense of it. Rebuilding efforts produced winners as well as losers, generating at least a short-term redistribution of income. Both the authorities and the private sector engaged in relief and support for the townspeople, suggesting that while the disaster might divide people, it could also bring them together. The author also contends that although the disaster was not in itself a revolutionary event, some of its effects conditioned Edo society for major change. Coming so soon after the arrival of Commodore Perry's fleet two years earlier, the catastrophe helped to expose and weaken Bakufu (Tokugawa) power. Many Japanese drew connections between the two events, particularly since the victims of the destruction included five off-shore forts built to protect the coast against foreign incursion. The 1855 Ansei Edo earthquake contributed in a significant way to shifts in religious emphasis that were to have political implications, and came to be perceived as part of a broader process of major change. Smits argues in addition that the disaster became a reference point in modern seismology, prompting a rethinking of the causes of earthquakes and encouraging the view that human agency could both predict them and mitigate their effects. In particular, it promoted a lasting belief that such catastrophes could be predicted if only the precursor phenomena could be correctly identified.

Seismic Japan is a work of sound and detailed scholarship, which makes use not only of extensive written archival sources, but also of a wide range of visual sources. The story is told in an engaging and lively manner. The book makes a lasting contribution to our understanding of social and cultural change in the fading years of the Edo period, and in its contribution to the history of seismology and the social construction of earthquakes in early modern Japan is a worthy counterpart to Gregory Clancey's work on the late 19th- early 20th centuries.⁴ Given the current prominence of debate on seismic issues in Japan, many readers of this review might perhaps have expected more than the author's brief attempt to offer a final postscript on 'Rhetoric after the Great East Japan Earthquake'. However, this is unashamedly an historical study, and at the time of writing the post-March 2011 discourse was still in its infancy. Smits in fact seeks to offer an in-depth analysis of the social and intellectual history of earthquakes in Japan, focussing on the northeastern Tōhoku region, in a further recent publication,⁵ which can usefully be read in conjunction with *Seismic Japan*. As will be discussed below, *Seismic Japan* also raises a number of issues that feature in the other two monographs considered here.

Nearly seventy years after the disaster that is the focus of Smits' study, on 1 September 1923, the area around Japan's capital of Tokyo was hit by the Great Kantō Earthquake, which through collapsing buildings, fire and *tsunami* caused a greater loss of life than any other natural disaster in Japan's history. The core objective of Charles J. Schenking's study of this seminal event is to analyse how elites 'interpreted, constructed and packaged' the disaster and 'attempted to use it for larger political, ideological, social and economic aims' (p.4), and to discuss how others responded to those narratives and the practical objectives associated with them. The book analyses the event as 'lived experience', and explores the debates over regeneration and reconstruction that followed. Making use of contemporary accounts, the author provides a riveting and graphic account

⁴ Clancey, G. (2006). *Earthquake Nation: the Cultural Politics of Japanese Seismicity 1878-1930*, University of California Press, Berkeley CA.

⁵ Smits, G. (2014). *When the Earth Roars: Lessons from the History of Earthquakes in Japan*, Rowman & Littlefield, Lanham MD, Boulder CO, New York NY, Toronto & Plymouth UK.

of the terror, anarchy and irrationality that followed the disaster, and the difficulty the authorities faced in restoring order. Like Smits, Schenking sees the disaster as providing a window on the Japanese society of the time, and emphasises the various narratives of the catastrophe that emerged in elite and popular discourse. Newspapers collaborated with national and local elites to construct the earthquake as a national (rather than local) tragedy, while many saw what had happened as a moral wake-up call and proof of Japan's moral decline and degradation.⁶ Informed by such interpretations, and by the realisation that Japan's capital area was ill-prepared to cope with disaster, including in the face of any future war, plans rapidly evolved to rebuild Tokyo as a vision of Japanese progress. For such advocates Tokyo would be a world city that would transform the physical environment and welfare of its citizens, and re-educate them into a new state of grace.

As Schenking clearly shows, however, the ambitious plans led by the mayor of Tokyo, Gotō Shinpei, foundered due to a range of factors. These included economic and financial realities and the need of individuals to rebuild as quickly as possible their daily lives in the face of delays to formal reconstruction efforts. Most crucially, perhaps, the author highlights the significance of political contestation generated by coordination failures within an increasingly pluralistic state and diffuse political power, with neither democratic nor oligarchic elements sufficiently strong to produce cooperation and unity. As Schenking observes, Japan's form of government was ill-suited 'to respond effectively and efficiently to a catastrophic natural disaster or the subsequent reconstruction program' (p.223). Limited reconstruction success in practical terms, however, did not impede a top-down push for spiritual renewal and moral suasion that left its mark in the persistence of thrift campaigns, but ultimately failed to curb the growth of consumption. Schenking's conclusion is thus that while many people, both then and now, have believed that disasters have the capacity to generate significant change, analysis of the Great Kantō Earthquake suggests that they are more likely to reveal things that are already there, and to amplify existing trends.

Schenking's study, like that of Smits, is based on an enormous amount of research. Well-written and compelling, this narrative too draws on both written materials and visual sources. It consolidates some of the analysis in earlier publications⁷ into a major monograph that is, like most good monographs, more than the sum of its parts. It complements in its content recent Japanese accounts, such as that of Kitahara Itoko,⁸ and will act as a seminal work not only on the disaster itself, but on the politics and narrative of the disaster, for many years to come. Its focus on Tokyo allows the author to explore in depth the city's politics, though perhaps at the expense of analysing the wider impact of the disaster on the broader Kantō region as a whole. We are given tantalising suggestions of what the catastrophe meant for the relationship between the metropolis and other parts of Japan in this context of 'national' disaster, but the full 'national' story of the disaster remains unclear. In Yokohama, for example, the destruction was proportionately even greater than in Tokyo, and its very future as Japan's leading export port was open to question. The disaster generated multiple debates not only over the pros and cons of rebuilding a new and improved capital, but over the implications of this strategy for regional and local interests anxious to capitalise on any opportunities offered by the dislocation at the centre. How the 'event' played out in this wider geographical area is surely a part of the narrative of a 'national' disaster that yet remains to be told.⁹

⁶ Smits' and Schenking's accounts suggest that ideas of divine punishment were actually more muted in 1855 than was to be the case in 1923.

⁷ Eg. Schenking, C. (2006). Catastrophe, Opportunism, Contestation: the Fractured Politics of Reconstructing Tokyo Following the Great Kantō Earthquake of 1923, *Modern Asian Studies* **40**: **4**, 833-74; Schenking, C. (2008). The Great Kantō Earthquake and the Culture of Catastrophe and Reconstruction in 1920s Japan, *Journal of Japanese Studies* **34**: **2**, 294-334; Schenking, C. (2009). 1923 Tokyo as a Devastated War and Occupation Zone: the Catastrophe One Confronted in Post Earthquake Japan, *Japanese Studies* **29**:**1**, 111-29.

⁸ Kitahara, I. (2011). *Kantō Daishinsai no Shakaishi*, Asahi Shinbun Shuppan, Tokyo.

⁹ There are a number of recent publications on the disaster in Yokohama, eg. Imai, S. (2007) *Yokohama no Kantō Daishinsai*, Yūrindō, Tokyo, which suggest that the experience of the country's main port was in some respects very

The concern with political elites that characterises Schenking's study is the core consideration of Richard Samuels' *3.11 Disaster and Change in Japan*, whose focus moves us on nearly ninety years to what is formally referred to as the Great Eastern Japan Earthquake Disaster, an event that will be far more familiar to most readers of this journal. On 11 March 2011, a major earthquake and *tsunami* off the coast of northeastern Japan caused thousands of deaths along much of the eastern coastline and nuclear meltdown in Fukushima Prefecture. The unfolding disaster brought with it the global dissemination of the first sustained live, horrifying pictures of such a catastrophe. Richard Samuels' book, unlike those of Smits and Schenking, is not, and could not have been, the outcome of years of research in the historical record. Published in 2013, a mere two years after the event, the author acknowledges that many of the processes and debates identified have yet to run their course, and it is hard to identify the extent of any changes consequent on the disaster. This book remains, nevertheless, a work of considerable scholarship that is based on a wide range of contemporary documentation and interviews, and which makes a powerful case in its admittedly preliminary conclusions. In line with Samuels' track record as a political scientist, the focus in the book is on the political narrative and the political response. The main argument is that the discourse of crisis as an opportunity for, or catalyst of, change was much stronger than the reality of such change, and in many respects 3.11 amounted to 'the continuation of normal politics by additional means' (p.185).

Like Smits, Samuels stresses the importance of seeing the recent disaster in its historical context. He notes previous Japanese experience of natural catastrophe, and identifies the extent to which disasters of this kind have been susceptible to narrative construction and have become tools for policy entrepreneurs. His core concern, however, is with the extent to which such disasters can generate paradigm shift and institutional change. Three main response narratives are identified: calls to use the disaster to take a new direction; calls to stay the existing course (but to do it better); and what he calls the 'reverse course', namely the need to use the calamity to revert to better and older times and ways of doing things. The author then takes three particular areas – security, energy and local government policy – in which these narratives are explored, areas that allow Samuels to build on his earlier scholarship to provide detailed and incisive analysis of the possibilities for change in each area.¹⁰ He concludes that despite the widespread acknowledgement of the positive role of the Self Defence Force in the aftermath of the destruction of March 2011, and the practical lessons regarding its role in disaster response, the impact on institutions of national security and prospects for new dynamics in the alliance with the US have remained limited. In the energy sector, despite acknowledgement of the extent of regulatory capture and public protest against dependence on nuclear power, change has remained slow and uncertain. Even in the case of the main protagonist, the Tokyo Electric Power Company (TEPCO), there have remained 'business as usual' arguments. The same three narratives have emerged regarding local government structures, but the author suggests that while the disaster rekindled debates over decentralisation, local autonomy and regionalisation, challenges to the prevailing local government system were already underway before the disaster struck. So, Samuels concludes, while the 3.11 catastrophe may have released or accentuated changes that were already under way, it was not in political terms itself a game-changer. Nor did it constitute the kind of disjuncture that has been widely believed by social scientists and historians to be necessary for substantive political, economic and social change.

The 3.11 disaster is in some ways set apart from earlier seismic events by the nuclear crisis that ensued, and disentangling the nuclear issue from analysis of the earthquake and *tsunami* is hardly possible. There has, of course, been generated a growing literature on the overall political, social and economic effects of the disaster, on competing narratives and interpretations of the event,

different to that of Tokyo. Bringing these accounts together would likely emphasize the disunity in the response to catastrophe identified by Schenking.

¹⁰ The author's previous works on these topics include Samuels, R. (1983). *The Politics of Regional Policy in Japan: Localities Incorporated?*, Princeton University Press, Princeton NJ; Samuels, R. (1987). *The Business of the Japanese State: Energy Markets in Comparative and Historical Perspective*, Cornell University Press, Ithaca NY; Samuels, R. (1994). *"Rich Nation, Strong Army": National Security and the Technological Transformation of Japan*, Cornell University Press, Ithaca NY.

and on eyewitness accounts.¹¹ That literature will continue to proliferate as it becomes more possible to identify with any accuracy the disaster's longer term impacts until, as is the way with such things, a sufficient amount of time has elapsed for it to move away from the domain of contemporary theorists and social scientists towards the domain of 'history', as is the case with the two earlier disasters considered here. Some of this burgeoning literature will, of course, prove to be largely ephemeral, but Samuels' book is likely to be among the scholarship that will be of lasting value, both for its in-depth and perceptive knowledge and for its clarity regarding how the disaster was viewed at a particular point in time. This is not to say, of course, that some of its analysis may come to be questioned. The author would, I have no doubt, be among the first to acknowledge that aspects of his 2013 analysis might well be rather different when viewed from a 2015 perspective, but his conclusion that the March 2011 disaster was not a political game-changer would still seem to ring true.

There is, of course, a world of difference between the Japan of 1855 and that of 2011. In political terms the Japan of 1855 was characterised by autocratic rule and limited rights for the majority, as well as sharp status and occupational distinctions. By contrast governance and government in 2011 operated under a democratic constitution in which all individuals had the right to vote and express opinions, and Japanese society, if no longer largely self-identifying as 'middle class', was not in the main subject to formal or even informal status distinction. In 1923, as Schenking suggests, Japan was in political transition between these two points on the spectrum, with both oligarchic and democratic tendencies present, but neither was strong enough to overwhelm the other. The Tokyo of 1923 was characterised by evidence of social transformation, with the rise of an urban working class, the *nouveaux riches* (*narikin*) of the First World War boom, and the so-called 'modern' boys and girls, yet life in large parts of the countryside continued in a manner often reminiscent of decades earlier. Economically, too, Japan has been transformed across this period of over 150 years. The urban commercial economy of mid-19th century Edo, the growing industrial, but still developing, economy of 1923 Kantō, and the industrialised – or post-industrial – economy of 2011 are also in many respects worlds apart from each other. The same could be said of the understanding of earthquakes, the technology to combat their worst effects and society's awareness of where they come from and what they might mean. There are, however, some striking resonances in the subject matter of the three very different books that are considered here. One source of those resonances is, of course, the fact that Japan is, in Clancey's words, an 'earthquake nation', located at the juncture of three of the world's tectonic plates and subject throughout its history to recurrent seismic disasters. The social, political and economic contexts of earthquakes, and their prominence in both discourse and belief, are therefore bound to take on a greater recurrent prominence than would be the case in any society in which such events are rare. The second is that while the three authors here differ in their approach and focus, and address somewhat distinct questions, some common themes emerge that go far beyond the individual case studies and have an applicability not only within Japan, but more broadly. The most important of these is the fundamental question of whether these large natural disasters really matter for longer term human development. Over and above their capacity to inflict immense suffering, to what extent do they have the capacity to change, and actually do change, the existing status quo in terms of material, social, institutional, intellectual and cultural life. They may 'compel reflection, inspire optimism, and lead people to believe that something better can and will emerge from the devastation',¹² but

¹¹ Among the scholarly accounts are Kingston, J. (ed.) (2012) *Natural Disaster and Nuclear Crisis in Japan: Response and Recovery after Japan's 3.11*, Routledge, London; Suzuki, I. & Kaneko, Y. (2013). *Japan's Disaster Governance: How was the 3.11 Crisis Managed?* Springer, New York; Bacon, P. & Hobson, C. (eds.) (2014). *Human Security and Japan's Triple Disaster: Responding to the 2011 Earthquake, Tsunami and Fukushima Nuclear Crisis*, Routledge, London.. Reports based on personal experiences have appeared both in Japan and outside the country, for example Hayasaka, T. & Niino, M. (eds.) (2011). *A Time of Disaster: the Great East Japan Earthquake and Tsunami*, Sasaki Printing and Publishing, Sendai; Birmingham, L. & McNeill, D. (2012). *Strong in the Rain: Surviving Japan's Earthquake, Tsunami and Fukushima Nuclear Disaster*, Palgrave Macmillan Trade, Basingstoke.

¹² Schenking, *Great Kantō Earthquake*, p.xv.

how far, as Tirthankar Roy has asked, do violent shocks really 'disturb the rules by which societies organize themselves'?¹³ The remainder of this review will draw on these resonances to suggest how scholarship of this kind may help us better to understand how earthquakes and the responses to them are embedded in people's lives.

'Unprecedented' Disaster: Change and Continuity

All the disasters discussed in these three volumes were referred to at the time as 'unprecedented' (*mizō, misou*) or 'beyond supposition' (*sōteigai*). For a disaster to be 'unprecedented', is, of course, a way of distinguishing between greater and lesser events in a context in which natural disasters are the recurrent norm, suggesting also that the magnitude of the event in question has had no known precursor.¹⁴ At the same time, however, the concept can serve to signify a degree of exemption from any obligation to try and predict such a major occurrence or to have in place sufficient contingent mechanisms for dealing with its human and physical consequences. As Samuels notes in the case of 3.11, the term was used as an excuse for not having been well-prepared. In regarding these major events as 'unprecedented', therefore, the locus of responsibility for disaster planning and response becomes particularly unclear; this provides even greater scope for the diversity of narratives, explanations and responses that, as these three accounts show, is already generated by major disruptions. The nature of the response to such 'unprecedented' events would also seem more likely to leave significant lacunae that can be filled by existing agendas and ideologies seeking to capitalise on the confusion and disruption. Unprecedented disaster, therefore, has the potential to strengthen the possibility of catastrophe becoming opportunity, on both a collective and individual basis. This 'disaster as opportunity' scenario is a recurrent theme in Japan's experience, as demonstrated not only in these works, but in others as well. Janet Borland's paper on education policy in Japan after 1923, published in this journal in 2006, has as its title 'Capitalising on Catastrophe'.¹⁵ Indeed, there is considerable historical evidence from across the globe that both manmade and natural disasters can act to bring about substantive change. Mancur Olson's suggestion that the disaster that was the Second World War was instrumental in bringing down distributional coalitions in Germany and Japan, paving the way for significant political and economic growth, is far from problem-free, but remains powerful.¹⁶ Alvaro Pereira has suggested that the 1755 earthquake in Lisbon, by permitting the Marquis de Pombal to consolidate his power, laid the foundations for successful reform and economic growth.¹⁷ Smits here argues that the 1855 Ansei Edo quake, while not in itself delivering dramatic transformation, nevertheless played an important role in the broader process of longer term change. In contrast, both Schenking and Samuels offer persuasive evidence that a range of factors can outweigh any need for or desire for change, and the ability of society to deliver such change can be strictly limited.

The potential for disaster as opportunity is often more apparent in the case of the individual than in the case of the broader community or polity. Even in the face of the plight of the many sufferers, there are always likely to be individual winners from the crisis situation, particularly over the short term. Gains may, or may not, be intentional, or at the immediate expense of the losers, but they tend for the most part to be the outcome of the near universal inclination to take advantage of

¹³ Roy, T. (2012). *Natural Disasters and Indian History*, Oxford University Press, Delhi, p.2.

¹⁴ Samuels draws on Taleb's concept of 'black swan' events in relation to highly improbable occurrences, as does Theodore C. Bestor in his 2013 article 'Disasters, Natural and Unnatural: Reflections on March 11, 2011, and its Aftermath' (*Journal of Asian Studies* 72: 4, 763-82).

¹⁵ Borland, J. (2006). Capitalising on Catastrophe: Reinvigorating the Japanese State with Moral Values through Education following the 1923 Great Kantō Earthquake, *Modern Asian Studies* 40: 4, 875-907.

¹⁶ Olson, M. (1982). *The Rise and Decline of Nations: Economic Growth, Stagflation and Social Rigidities*, Yale University Press, New Haven CT. For a more recent critique see Moe, Espen (2009). Mancur Olson and Structural Economic Change: Vested Interests and the Industrial Rise and Fall of the Great Powers, *Review of International Political Economy* 16: 2, 202-230.

¹⁷ Pereira, A.S. (2009). The Opportunity of a Disaster: the Economic Impact of the 1755 Lisbon Earthquake, *Journal of Economic History* 69:2, 466-499.

potentially favourable opportunities. Smits (ch.4) notes how in 1855 workers engaged in the reconstruction effort enjoyed rapidly rising wages, enabling some to engage in lavish spending, which in turn benefited the merchants who catered to their needs. A similar rise in wages for construction workers can be observed in 1923.¹⁸ But determining for whom the disaster offers an opportunity, and who is able to take advantage of those opportunities, requires us to consider in greater depth the distributional aspects of a disaster and its consequences. We need to think about the identities of the beneficiaries as well as the identities of the sufferers, economically, politically, socially and culturally. We need to understand more about the potential and actual impact on class and caste structures as well as on economic and political organisation. The physical geography of destruction may mean that certain groups of society are affected disproportionately. In the case of the 1855 earthquake the evidence is not clear cut, and Smits shows that all levels of society could be badly affected, but in 1923 the most devastated parts of the city of Tokyo were the more easterly working class and manufacturing and warehousing areas, where residents were likely to lose both homes and jobs. The 2011 disaster struck a more rural area with a high proportion of families on lower incomes and the elderly.

Vulnerability, however, goes far beyond simple location, and intuition and historical evidence would suggest that for the most part it is the poorer members of a society who are likely to suffer more in the context of a major disaster. It can be argued, of course, that the poor have less to lose and need fewer resources to rebuild. Recovering to a low income level takes less money and probably less external support than finding the funds to rebuild a major factory or enterprise and an opulent life style. However, on balance the evidence suggests that into the contemporary period it is in general the less well off members of society who are most vulnerable to such a major adverse shock. Lower income groups have been less likely to be insured, have had less access to emergency food supplies and medical care, have had more limited access to capital to rebuild, and fewer wealthy friends or relatives on whom they can rely for support. In developing economies, in which social safety nets have remained very limited, their exposure to risk has been disproportionately high. Disaster specialists have highlighted the importance of economic, social and political vulnerability to the analysis of disasters,¹⁹ and understanding different types of vulnerability is critical to a greater understanding of both real consequences and narrative interpretations. We need to achieve a deeper awareness of the varying vulnerabilities of those who are potentially affected, some of which are manifested in the books considered here.

Understandably, most concerns about the distributional impact of earthquake disasters focus on those who are directly affected by the physical destruction. In both reality and interpretation, however, the significance of these disasters can go well beyond the area of impact. An interpretation of a disaster as an indicator of moral failings extends the failing beyond those directly affected; a much broader society finds itself being indicted. Schenking's account hinges on the extent to which the 1923 quake was represented as a national rather than just a regional disaster, bringing into the relief effort and debates over reconstruction people across the archipelago. Even without the accompanying nuclear disaster the traumas inflicted by the earthquake and *tsunami* of March 2011 impacted on national-level organisations and institutions and, as Samuels shows, became fuel for pre-existing agendas and narratives. In practical terms as well earthquakes have knock-on effects that extend far beyond the devastated area to impact on other locations and regions. The more the area of immediate impact is subject to political, economic and cultural integration, the wider the potential ramifications of the event. The damaging impact of the March 2011 disaster on the global supply chain, particularly in the automobile industry, is a case in point. Considered in this light, major earthquakes would thus seem to have the potential to change the balance of political and economic power, as well as being open to narrative interpretations on the

¹⁸ Nōshōmushō Shōmukyoku (1924). *Kantō Chihō Shinsai no Keizaikai ni oyoboseru Eikyō*, Nōshōmushō, Tokyo, p.34.

¹⁹ Alexander, D. (1997). The Study of Natural Disasters, 1977-1997: Some Reflections on a Changing Field of Knowledge, *Disasters* 21: 4, 284-304; Benson, C. & Clay, E.J. (2004). *Understanding the Economic and Financial Impacts of Natural Disaster*, Disaster Risk Management Series no.4, The World Bank, Washington DC.

basis of diverse locations and communities. Smits suggests that the 1855 Ansei Edo earthquake, although relatively localised, and not revolutionary in itself, helped to condition society for major change. By contrast, in both 1923 and 2011, the geographical and physical ramifications of the disasters were proportionately greater, and the narratives more clearly 'national', but even so they failed to generate change at that same level. The suggestion from these accounts, therefore, is that wider impact and more ambitious narratives do not necessarily make a disaster a better conduit for fundamental or permanent change. The scale of loss and impact obviously matters, but even more important may be the distribution of that loss and impact.

One constraint on the engineering of more permanent change has perhaps been the existence of the potentially conflicting concepts of *fukkyū* (restoration) and *fukkō* (renaissance) that emerged in the debates following March 2011, just as they had done in 1923. Restoration, of course, embodies the idea of going back to the previous 'normal', while renaissance embraces calls for society to take the opportunity to turn onto a new path. While change could be embodied in either form, this does seem to be an important distinction in a post-disaster situation. There is substantial evidence that a desire to return to the *status quo ante*, to the previous normality (or what passed for it), is a powerful impulse in people's responses to major natural disasters, whether or not that previous normality is worth returning to. Security in a time of disorder resides in familiarity, custom and knowing whom or what one can trust or rely on. And it is this inherent conservatism, as much as anything else, which may impede the efforts of governments and other elites to take advantage of a disaster scenario to change direction.

Trust, Government and People

At the core of the individual and collective response to natural disasters lies the issue of trust. The events of March 2011 produced what Funabashi Yoichi, editor of the *Asahi Shinbun*, called 'a crisis of trust'.²⁰ And a 'crisis of trust' is the almost universal consequence of disasters, past and present, across the globe. By 'disturbing the rules by which societies organize themselves', by being supreme examples of unpredictability in relation to people's daily lives, and by placing those affected in a position in which survival becomes the main priority, individuals and communities can no longer be relied upon to act according to the normal rules of the game. At the same time, of course, the history of disasters abounds with examples of individual altruism as well as community cooperation and solidarity. How, then, can these two strands be reconciled? And what kinds of loss of trust are we talking about? Francis Fukuyama focussed on trust as a function of the interaction between culture and economic activity, and lamented the decline in social capital in many of the world's leading economies: 'Democratic political institutions no less than businesses depend on trust for effective operation, and the reduction of trust in a society will require a more intrusive, rule-making government to regulate social relations'.²¹ 'Culture', of course, however we define it, is clearly a key factor in any disaster outcome, underlining the importance of prevailing contexts and ideology in the formulation and execution of any response, as well as in the narratives that seek to make sense of it.

The importance of 'networks', 'bonds' (*kizuna*) and the relative absence of looting and maintenance of order in the response to 3.11 were widely touted as manifestations of a particular Japanese culture and resilience.²² Certainly the existence of shared formal and informal institutions

²⁰ 'March 11 – Japan's Zero Hour', in McKinsey & Co. (ed.) (2011). *Reimagining Japan: the Quest for a Future that Works*, VIZ Media, San Francisco, p.9.

²¹ Fukuyama, F. (1995). *Trust*, Penguin Books, London, p.361.

²² For social capital in disasters in Japan and Asia see Aldrich, D. (2012a). Social, Not Physical Infrastructure: the Critical Role of Civil Society in Disaster Recovery, *Disasters* **36**: **3**, 398-419; Aldrich, D. (2012b). *Building Resilience: Social Capital in Post-Disaster Recovery*, Chicago University Press, Chicago IL; Aldrich, D. with Yasu Sawada & Sothea Oum (2014), *Resilience and Recovery in Asian Disasters: Community Ties, Market Mechanisms, and Governance*, Springer Press, New York. For Japan Rieko Kage's 2011 publication (*Civic Engagement in Postwar Japan: the Revival of a Defeated Society*, Cambridge University Press, Cambridge) has drawn attention to the impact of the Pacific War on early postwar civic engagement.

can make it easier to organise a collectively coherent response at a time of crisis, but this should not blind us to the fact that the purely practical problems of survival caused by disasters may make it very difficult for relationships of trust to prevail. They make it difficult for one person to trust another, for people to trust their leaders, for communities to trust the politicians, bureaucrats or managers who seek to regulate their lives or on whom their livelihood may depend, or for consumers to trust those from whom they are making purchases. Some of the ways in which trust is undermined are relatively inconspicuous, but nevertheless potentially highly damaging. The effective functioning of a modern market economy, for example, is dependent on access to information and the availability of credit. A large scale natural disaster, such as the 1923 Kantō one, or, more recently, that of 3.11, has the capacity to wipe out information. Loss of physical written records or digital databases can make it impossible to know with any accuracy the credit and debt situation of an individual or a business, or what their legal contractual obligations or entitlements may be. In the absence of such information how is a trading partner or a seller to know whether any debts will be honoured or a financial institution to know whether a business will be able to repay any credit that is extended?²³ The crisis of trust can, however, take a far more conspicuous form. The studies reviewed here show that the trust in seismological experts and the elites who act on their advice can be one victim. Smits suggests that the Ansei Edo quake of 1855 eroded trust in the cosmology of earthquakes. The 1923 disaster undermined trust in the judgement of Ōmori Fusakichi, the pioneering seismologist who, unlike his colleague Imamura Akinosuke, had underestimated the likelihood of a major earthquake in the Kantō region.²⁴

Another casualty can be trust in government. We know that trust in Japan's government was dealt a major blow by its initially inadequate response to the Kōbe (Hanshin) earthquake of 1995.²⁵ As Samuels demonstrates, the Tōhoku disaster of March 2011 served to shore up public trust in the Self Defence Force, but the widely-acknowledged failures associated with the management of the Fukushima nuclear plant led to a spectacular loss of confidence in the ability of TEPCO, 'captured' regulators and government to address appropriately the disastrous consequences of those failures. In different ways, therefore, the three accounts here all expose the more or less dramatic capacity of major seismic disasters to undermine the trust that upholds social cohesion and collaboration and so often acts to maintain social, political and economic institutions. In the process the opportunities for change may be further opened up. Restoring that trust may well be an ingredient in limiting change, but its continuing absence is no guarantee that change will take place, as Samuels' account of the nuclear aftermath of 3.11 clearly shows.

Any lack of trust in government and elites is particularly problematic given the widespread and longstanding assumption – even in the most non-interventionist economies – that government has a particular responsibility to prepare for disaster, and to act when it occurs. The Lisbon earthquake of 1755 firmly established a precedent for relying on the state in such circumstances.²⁶ Cogent arguments can be made that it is the authorities who are uniquely placed to provide relief and re-establish some regularity and organisation in the context of a near-total breakdown of law and order and failure of subsistence goods. Governments often have more comprehensive access to necessary information as well as some coercive power, and it is now widely accepted by experts that the leadership in disaster risk mitigation has to come from the government. Where trust is in short supply the authorities might be expected to have to play an even greater part. In the case of the catastrophes discussed here, the role of the authorities is particularly prominent in the accounts of the 1923 and 2011 disasters, but it is far from absent in Smits' analysis of 1855. On balance the relief efforts of the authorities come out fairly well in these accounts. Smits describes the

²³ I have noted some of these economic problems in the case of the 1923 earthquake in my 2014 paper "Extreme Confusion and Disorder"? The Japanese Economy in the Great Kantō Earthquake of 1923, *Journal of Asian Studies*, **73**: 3, 753-773.

²⁴ Clancey, G. (2012). Japanese Seismicity and the Limits of Prediction, *Journal of Asian Studies* **71**: 2, pp.335-7.

²⁵ Edgington, D.W. (2010). *Reconstructing Kobe: the Geography of Crisis and Opportunity*, University of British Columbia Press, Vancouver & Toronto, p.102.

²⁶ Quenot, G. (2012). 'Earthquakes in Early Modern France: from the Old Régime to the Birth of a New Risk' in Janku, A. et.al. (eds.), *Historical Disasters in Context: Science, Religion and Politics*, Routledge, London & New York, p.107.

introduction of rapid measures to support the affected townspeople through the provision of emergency food and shelter and aid for the wounded. The relatively rapid distribution of relief for survivors and restoration of supplies in 1923 described by Schenking seems to stand in strong contrast even to some relatively recent cases, such as Haiti in 2010, testifying to the importance of state capacity. Despite some complaints of an initially slow government response in 2011, lessons had been learnt from the 1995 Kōbe disaster, and further lessons were drawn in terms of the practical ability of the Self Defence Forces to respond to natural calamity.

Government can, of course, also be part of the problem. Political leaders and their officials can not only contribute to better relief efforts and more rapid recovery, but also impede them. Governments, like other actors, have agendas and priorities. Their members are in a strong position to formulate dominant narratives of the disaster. As the response to 3.11 indicates, a lack of confidence in the government itself can exacerbate rather than alleviate some of the problems. State capacity may also of itself impact on the potential of a disaster to bring about change. A state that proves itself efficient and receives credit for its relief efforts may also be limiting the pressures it faces to engineer more major change, and even strengthening its own institutional rigidity and that of the society within which it operates. The role of government in a post-disaster environment therefore has to be analysed not just in terms of any trajectory from autocracy to democracy, but in terms of the actual measures needed to provide necessary aid and re-establish daily life.

Government does not, of course, act in a vacuum. State capacity in the wake of disaster is contingent on its interaction with the private sector. The coexistence and cooperation of the private and public sectors would seem to be one of the keys to understanding and managing the vulnerability of a society in the face of these major risks. All the disasters considered here, as well as others, entailed a combination of governmental and community response. In 1855 the private sector joined the Bakufu and domainal authorities in securing and stockpiling necessities, and in bringing in skilled workers from the countryside, although Smits acknowledges that some of this generosity may have been somewhat self-serving. The big business sector in 1923 cooperated actively with the authorities in the provision of supplies and rebuilding of institutions. The 1995 Kōbe disaster is credited with an enormous growth in the importance of civil society in Japan,²⁷ on which the relief and rebuilding efforts after 11 March 2011 were able to build. The balance of activity between the public and private sectors will, of course, be determined by the relative strengths and deficiencies of their respective institutions and organisations, by the possibilities allowed by the disaster itself, and by the expectations harboured by the population. Nevertheless, the two sides must, whatever the circumstances, function in a complementary way if effective recovery is to be achieved. Where this does not happen the potential for exacerbating existing problems is immense. As Peter Boettke's research team has noted in relation to the aftermath of Hurricane Katrina, 'the political process does not have access to the information generated by the market process and actors within the political context face different incentives than those in the market'.²⁸ One commentator on the management of natural disasters in India, while commending some of the efforts made by the state, has also poignantly commented that 'more would be achieved if the rest of us could also all be made partners in the undertaking'.²⁹

²⁷ Shaw, R. & Goda, K. (2004). From Disaster to Sustainable Civil Society: the Kobe Experience, *Disasters* **28**: 1, 16-40.

²⁸ Boettke, P. et.al. (2007). 'The Political, Economic and Social Aspects of Katrina', *Southern Economic Journal* **74**: 2, p.369. Chamlee-Wright, E. (2010), in *Cultural and Political Economy of Recovery: Social Learning in a Post-Disaster Environment* (Routledge, London) has analysed the importance of civil society and market activity in recovery from Hurricane Katrina, downplaying the contribution of government assistance.

²⁹ Patel, S.B. (2010). 'Introduction: Earthquakes in India' in Patel, S.B. & Revi, A. (eds.). *Recovering from Earthquakes: Response, Reconstruction and Impact Migration in India*, Routledge, London & New York, p.13.

Concluding Observations

The works of these three scholars suggest that while major disasters of the kind detailed here may contribute to long term processes of change in a variety of ways, particularly where that change is already in progress, attempts to make use of the disaster to deliver dramatic and planned change over the shorter term may well be less successful. The short term effects of the 1855 Ansei Edo earthquake were largely limited to some redistribution of income, although Smits argues that the disaster in many ways acted as a catalyst for major change in later years, and helped to lay the foundations for new explanations and interpretations of seismic activity. Schenking's work describes how, despite the casting of the earthquake as a national disaster and the nationwide calls for spiritual renewal, the dramatic visions for rebuilding Tokyo foundered on political conflict, economic constraints and the realities of people's lives. The prospects for fundamental change after March 2011, Samuels argues, have been for the most part dim, except where change was already underway, such as with the mounting challenges to the local government system. Two years on from the publication of his book on 3.11 the likelihood of fundamental change seems no greater. Disaster seems to be an opportunity for change only in as far as collective responses reflect the prevailing context and ideologies or individual responses can capitalise on the maximisation of individual self-interest, economically, politically or socially. And yet the potential for at least some change in such upheavals clearly exists. Martland's study of the 1906 Valparaiso earthquake shows convincingly how the disaster caused the balance between municipal and central authority to shift decisively in favour of the latter.³⁰ The 1906 San Francisco earthquake revolutionised the insurance industry.³¹ Massive physical destruction always offers the possibility of shifts in regional balances of power, while the associated human casualties and social disorder threaten existing institutions and political regimes. Calls for change are universally prevalent under such circumstances, whether their advocates, as Samuels has identified, call for a new direction, a reverse course or merely an improvement of the *status quo*. Our challenge lies in knowing when that potential for change may be realised, and why these major natural disasters seem so rarely to offer any kind of complete disjuncture. In that context, the three works reviewed here have made a major contribution to the existing literature by allowing us better to understand how people in Japan have sought to interpret, respond to and manipulate three of the major earthquake disasters in the country's modern history. Like all good scholarly works they leave us with even more unanswered questions, some of which I have tried to identify here.

³⁰ Martland, S. (2007). Reconstructing the City, Constructing the State: Government in Valparaiso after the Earthquake of 1906, *Hispanic American Historical Review* **87**: 2, 221-254.

³¹For a short comment on this see Siemens, R. & Gillon, P. (2010). Lessons from the Great Fire of 1906, *Risk Management* **57**:10, 10-11.