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## POLITICS OF SPACE BY PLACE NAMES IN AN UNCERTAIN WORLD: SCALES OF GEOGRAPHY AND SITUATION AFTER “FUKUSHIMA”

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*Abstract* This paper examines politics of space by the place name Fukushima after the Fukushima Daiichi nuclear power plant accident. The author proposes a situation name that is distinct from a place name, and applies a scale viewpoint to the geography of radioactivity. The situation concept means an invisible, uncertain and ongoing crisis. Proper names including place names serve to fix a reference to a specific object or event, according to analytical philosophy. Japanese mass media and government offices have specifically stressed the scale of the Fukushima prefecture. However that scale contradicts the physical geography caused by the nuclear disaster and the diverse ways of life and behavior in the Fukushima situation. Other geographical scales, such as global, national, city, and town, also work in the Fukushima situation. Both geographical and situational scales are expected to separate the people even in the same community of Fukushima. To live Fukushima is not always the same as to live in the Fukushima Prefecture. Understanding several geographical senses of home matters.

**Key words:** place name, geographical scale, situation, nuclear disaster, sense of home

### 1. Introduction

What do we indicate by a place name? How does a place name work in our everyday conversation? In order to answer these questions, the author has a special attention to the geographical structure of what the place name “Fukushima” indicates in public discourse after March 11, 2011. This paper examines how a politics of space by the place name Fukushima has functioned in mass media and in our daily lives, depending on an apparent notion that “Fukushima” would refer to the Fukushima nuclear accident or the actual Fukushima Prefecture. But cannot a place name be a kind of concept or situation name?

We used to think one place name corresponds to the land as a one-to-one relationship. It seems natural that a place name be regarded as the address of that region or topography. That appears self-evident. However it could, all at once, call a body of uniquely lived experience to nature, society, and economy in the land (Tanabe 2010: 10-11). Further, the image and meaning of

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place name could socially change due to historical events, even if the name itself does not change (Kagami 1984: 237-241). Therefore, place name does not simply indicate the land, but also the geographical entity. How could we grasp an invisible radioactive world using a place name?

We can begin with one narrative about “Fukushima.” The author has heard that some people from the Fukushima Prefecture told one unexpected “if-sentence” after the severe accident of Tokyo Electric Power Company’s (TEPCO) Fukushima Daiichi nuclear power plant. That is, “Consumers might have purchased more agricultural and fishery goods produced in the Fukushima Prefecture, if the nuclear power plants had been named differently” (for example, using the county name in which it is located, “Futaba nuclear power plant”). This if-sentence is, according to analytical philosophy, an example of the “counterfactual” that is told: “X would have been...,” or “X might have been...,” imagining a possible world that is slightly different from empirical facts. In the narrative above, it seems that the speaker focuses on two geographical scales to save the prefecture from the accident, hypothetically.

Why do people introduce such counterfactual information into their everyday conversation after the severe Fukushima Daiichi accident? How could a place name have been linked with a specific scale of territory? Further, what kinds of meanings have mass media and the Japanese Government given the name “Fukushima”? This paper aims to respond these questions from a geographical scale perspective.

## **2. A Framework: Uncertainty, place names, and geographical scales**

### **The coming of an uncertain world in East Japan and the North Pacific Ocean**

In my view, the counterfactual sentence described above is an evidence that people in Fukushima might have found it difficult to accept the serious situation or crisis that human, social, and ecological damage has been extreme. The large *Anoekumene* (an area in which people cannot dwell) suddenly emerged in modern Japan as a densely inhabited area and advanced capitalist economy. Therefore, it should be mentioned that the phrase, the “accident” of the nuclear power plant, implies a considerably underestimated one. That is because the geographical consequences of the nuclear power plant accident absolutely differ from that of other most kinds of factories such as petrochemical or thermal power plants.

We need propose the disaster name as the political-economical, which places the focus more accurately on a multitude of serious phenomena that could never have arisen without the severe accident of the nuclear power plant (Mizuno 2014). Some examples include: (1) long-term disease anxiety caused by low-level radioactive internal exposure, (2) physical and mental disorders via evacuation behavior and temporary dwelling, (3) restlessness of residents and work in family members separated, (4) the destruction of primary industry, local community, and ecological systems, and so on. Moreover, I would propose a situation name that is distinct from place name in the sense of crisis that might bifurcate the Japanese political economy.

The impact of radioactive contamination is invisible, for a long-term, and trans-national. That should be wholly called an uncertain world. How can people survive in such an uncertain world? We suppose that people living in uncertainty would search for something more obvious, stable, and rigid. Therefore, many people would seek place name, radiation map, the idea of home, and threshold value as certain aspects that are important.

### **Logics of place names in analytical philosophy**

In analytical philosophy literature, a proper name has been studied mainly in two ways; one is “definite description” by Bertrand Russell, and the other is “rigid designator” by Saul Kripke. Russell thinks that one proper name can be replaced by the form of “the X” where X is a noun-phrase or an abbreviated definite description. It corresponds to a unique individual or object. Russell’s idea of definite description suggests that logical proper name is “this” or “that” that we can directly indicate. However we cannot necessarily form an ostensive definition without specifying a frame of reference or a social context in advance.

Conversely, Kripke emphasizes naming and indication rather than description. In his thought process, a proper name should be regarded as an act to fix a reference (Kripke 1980: 6). We can sum up his analysis of a proper name as the following four aspects: first, we make a distinction of an object as “just this, not others” by using a proper name; second, we indicate an object as an individual all at once; third, it can be applied to all possible worlds; and finally, it exists and is conveyed by means of a series of social communication (Kripke 1980: Chap.1). The author would like to adopt the idea of a “rigid designator” in order to explain the geographical structure of the place name “Fukushima.”

Kripke’s theory of proper name can enrich the framework of geographical structure of place names. However, the author wonders whether his theory could fully take into account a place name that refers to a part of a geographical continuum as well as a distinct object. It is necessary to understand that place name is connected to land and event in various geographical scales.

### **Geographical scales as socially produced**

Neil Smith mentioned that the scale concept was neither *a priori* hierarchical structure, nor simply an objective method of analysis (Smith 1993). The traditional concept of scale in geography literature has focused on the territorial hierarchy or the study area. Alternatively, it indicates a reduced ratio of physical land on a map. However, the social constructivist view has been introduced to the scale concepts in human geography since 1980s (Sheppard and McMaster 2004). It argues that geographical scale is a kind of “frame of reference” that regulates our view to a specific range of area in an abstract level of details. It should be stressed here that the topic of geographical scale theory is why a geographer selects one specific scale in her/his study, and not another scale (Onjo 1999: 71). A geographical scale has been specifically selected to a certain topic in our discourse, and often fixed as if the scale is natural and a default.

We would make a distinction of names of site, accident, and disaster of the Fukushima Daiichi nuclear power plant, geographically (Table 1). That is why the Japanese media has often called the names of the site and the accident but not the disaster. Most people would pay attention to the accident process of the nuclear power plant and the Fukushima Prefecture. However, we needed to have a name for the disaster. In the case of the earthquake on March 11, 2011, the Meteorological Agency named the earthquake as a natural phenomenon, “The Tohoku-Pacific Earthquake,” and The Ministry of Economy, Trade, and Industry called the disaster as a human-environment relationship, “The East Japan Great Earthquake Disaster.”

Similarly, we could call the disaster name of the nuclear accident, “The Nuclear Disaster of East Japan and the North Pacific Ocean,” for example. The name of the accident includes “Fukushima,” but that of disaster does not. We could also think that “Fukushima” is the name of a situation. The concept of situation would be more critical than that of disaster.

**Table 1** The Geographical and the Name of Fukushima

The Geographical	The Name of Fukushima
Address (or GPS)	Okuma Town, Futaba County, Fukushima Prefecture, Japan (or 37N25, 141E1)
Site	TEPCO's Fukushima Daiichi Nuclear Power Station
Accident	Fukushima Daiichi Nuclear Power Plant Accident
Disaster	(Nuclear Disaster of East Japan and the North Pacific Ocean)
Situation	(Fukushima)

The words in parenthesis show “not named.”

### 3. Critique of the Fixed Scale of Fukushima

#### “Fukushima” as place or situation?

Should we consider that “Fukushima” always means the Fukushima Prefecture? The author’s answer is almost always “No.” When people call it “Fukushima,” the author considers it may describe abbreviated words from “People in Fukushima” and “Life in Fukushima” on one hand, or it may point out the proper name of a situation, “Fukushima,” that refers to the body of the nuclear disaster, that is still ongoing and in a sense of crisis, on the other hand.

We would describe several aspects of the name “Fukushima” that can be applied to the social (Table 2). The Fukushima Prefecture was named after the town where the prefectural office was located in 1876. The town name “Fukushima” had been used in local levels by then. “Fukushima people” who dwelt in and evacuated from the Fukushima Prefecture have been given much attention since the nuclear disaster. Their identities changed to the ideas of “Fukushima as home” or “to live Fukushima” (Toyoda 2014). Additionally, the Fukushima brand, which had an excellent status of agricultural and stock raising foods (e.g. rice, pear, persimmon, pork, and so on) has been suddenly depressed. It has become important for urbanized consumers to know whether a specific food is produced in Fukushima Prefecture or not. Many consumers cannot help looking into the place name of production that is attached to a specific food, because the safety threshold values decided by the Japanese Government seems more underestimated than the case of Ukraine. The Japanese Government has put an advertisement, “Let’s eat and support Fukushima,” which has appeared in main newspapers and web pages, and performed by a famous singer group, TOKIO. However in other times, there are demonstrations against the re-operation of nuclear power plants, where people have often cried “Remember Fukushima” or “Restore Fukushima,” while walking together and beating a drum around the Japanese Official Residence. The Japanese Government regards it as the Fukushima Prefecture on one hand, while demonstrators use Fukushima as a situation on the other hand. The author thinks it matters how “Fukushima” is conceptualized in a politics of space after the nuclear disaster. “Fukushima” can become a concept as well as a place.

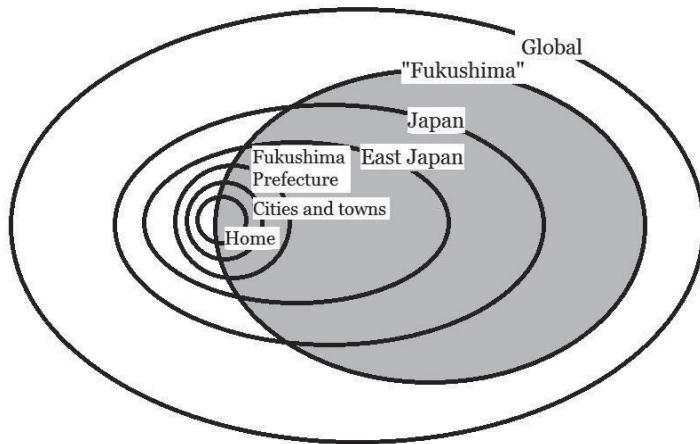
#### “Fukushima” situation scale

I would propose the scale of “Fukushima” situation to enrich a hierarchy of traditional geographical scales such as global, national, regional, city, town, and home (Fig. 1). The “Fukushima” scale can go across the usual geographical scales, as it indicates the situation that

**Table 2** The Social and the Description of Fukushima

The Social	The Description of Fukushima
Administration	Fukushima Prefecture
People	Dwelt in and evacuated from Fukushima Prefecture
Identity	Fukushima as home To live Fukushima
Economy	Produced in Fukushima Prefecture (Agriculture, forestry, stockbreeding, hunting and fishing goods)
Politics	“Let’s eat and support Fukushima” “Restore Fukushima”
Concept	(Fukushima)

The words in parenthesis show the detail or implication.



**Fig. 1** “Fukushima” situation scale.

would be the whole of areas and events invisibly affected by the Fukushima Daiichi nuclear accident. The author believes it is useful in two ways. One is that we can indicate the real geographical impacts of Fukushima Daiichi nuclear accident, and the other is that we can explain why people in the Fukushima Prefecture have been divided in several geographical scales.

The “Fukushima” situation scale is determined by the map of spatial radiation dosage that the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) has officially published in the web. However, the following points should be noted; neglecting the internal exposure, overlooking the threshold value (less than 20mSv/year), and discounting the North Pacific Ocean.

The Fukushima Daiichi nuclear disaster has not been localized by the territory of the Fukushima Prefecture. That is because radioactive materials from the Fukushima Daiichi site fly as plume in the atmosphere, and flow to the sea through rivers and ground water as contaminated water in the hydrosphere, and concentrate on any living body through a food chain in the biosphere. Therefore, the movement of radioactive materials is not restricted by any boundary of

human and social organization, but rather dependent upon the physical geography such as the direction and strength of wind, rainfall, local topography, hydrology, soil, and vegetation.

In the East Japan scale, radioactive materials have been spread over a part of the Iwate and Miyagi Prefectures, the northern parts of Kanto district, and the eastern suburb of the Tokyo Metropolitan Area, as well as the Fukushima Prefecture. Actually, the Japanese Government has designated many municipalities in eight prefectures that needed to be decontaminated. However, these municipalities have not always been referred to by mass media to avoid the so-called *Fuhyo-Higai* (decline of the reputation of agricultural and fishery goods and the real estate prices). That has reinforced the fixed idea that only the Fukushima Prefecture was contaminated.

The fixed idea that “Fukushima” means the Fukushima Prefecture caused problems. First, the Fukushima Daiichi nuclear disaster is more prone to be underestimated. It should be known that the disaster has spread over East Japan and the North Pacific Ocean. Second, the responsibility of the nuclear disaster has not been made clear, economically or politically. The underestimated disaster is easily connected to the idea of “unanticipated” natural disaster announced by TEPCO and the Japanese Government. Third, the nuclear disaster policy has been performed through the centralized administrative hierarchy, state-prefecture-city (or town, village), but the nuclear disaster is mainly based on the physical geography of sequential events. Fourth, Fukushima people as a whole have been stressed, although the territory of Fukushima Prefecture has historically been composed of three uniquely developed districts, *Hama-dori*, *Naka-dori*, and *Aizu*.

### **Scale of Fukushima Prefecture fixed**

The identification of “Fukushima” with the Fukushima Prefecture has been expressed in several types of arguments. For example, the identification was applied to the 2020 Tokyo Olympic final campaign in September 2013 in which Japanese Olympic Committee (JOC) President Takeda had to stress Tokyo was distant from Fukushima, so Tokyo would be a safe radioactive environment, and Prime Minister Abe also stressed that the situation of Fukushima Daiichi was under control, so that it would not threaten the chances of Tokyo in the Olympic-bidding process. However, the author thinks these arguments contradict the map of space radioactivity from Fukushima Daiichi and the unknown state of the three melt-downed reactors and spent nuclear fuel. It seems that they are trying to perform the politics of space, while fixing and advertising the scale of prefecture in the discourse (Fig. 2).

On the other hand, some people living in the Fukushima Prefecture would be critical of residents of the Tokyo Metropolitan Area in two ways (Shimizu 2012). Some argue that nuclear power plants located in the Fukushima Prefecture are outside of TEPCO’s monopolistic business area for Kanto district (particularly Tokyo). Therefore, it has been told in the Fukushima Prefecture that the location implies a gain for Tokyo, a disaster for Fukushima. And others mention Fukushima Daiichi nuclear accident as responsible for people in Tokyo (strangely, not the Government) as well as Fukushima, which has had the effect of Fukushima residents expecting that Tokyo residents buy and eat agricultural and fishery goods produced in the Fukushima Prefecture, if they are less than a certain radioactive threshold value. These two arguments are based on the privilege of the Fukushima Prefecture scale. However they neglect other geographical scales such as the national and the global, and the “Fukushima” situation, so that the responsibility for the nuclear power plant location and for the nuclear disaster cannot be fundamentally sought.

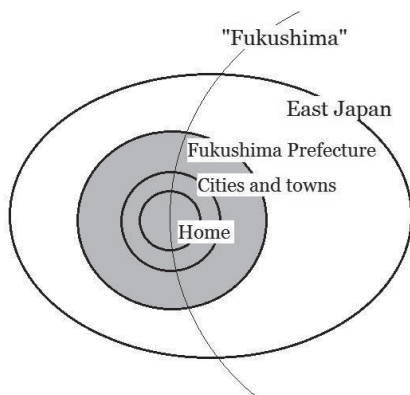


Fig. 2 Fukushima Prefecture scale.

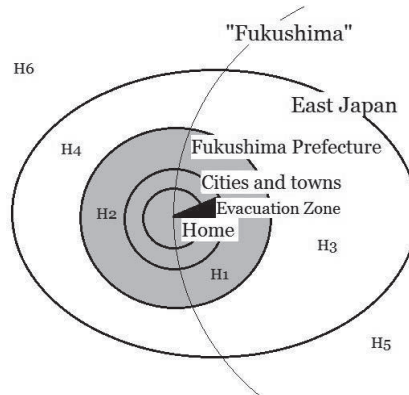


Fig. 3 Several types of sense of home.

#### 4. Other Scales of Fukushima

##### Upward Fukushima Prefecture scale

"Fukushima" as a situation is never restricted within the Fukushima Prefecture scale, as we have seen in Fig. 1. National and global scales should be seriously considered.

In national scale, the "Fukushima" situation matters at least in two ways. One is about 60,000 of out-migration from the Fukushima Prefecture to all prefectures, according to the web page of the Fukushima Prefecture. Further, an unknown number of people have moved from the Tokyo Metropolitan Area to mainly western parts of Japan because of evacuation from relatively high levels of environmental radioactivity. These new types of migration would affect the regional residential policy in both the municipalities of origin and destination.

The other is the impetus by the regional monopolistic electric power companies and the Japanese Government to re-operate 48 nuclear power plants suspended in Japan. However, the re-operation of these nuclear power plants must be logically connected to the Fukushima Daiichi nuclear disaster because the mechanical, social, and economical causes of the nuclear accident have never completely been investigated (NAIIC 2012).

Mass demonstrations against nuclear power plants around the Prime Minister's Official Residence and the National Assembly have often cried "Restore Fukushima!" as YouTube pictures have shown. What is the meaning of this phrase? It seems impossible that very large areas of *Anoekumene* will be decontaminated for a short term, except in houses, schools, and streets. The demonstrators would have claimed responsibility of nuclear disaster, compensating for the lives of people in regions with strong radioactivity, and disposing of the TEPCO's nuclear power plant accident and farther. Moreover, they would surely have called on the abandonment of nuclear power plants all over Japan, shouting "Objection, re-operation" many times.

In the global scale, we have faced problems with the international trade of agricultural and fishery goods and the ongoing marine pollution by radioactive mass fall-out and contaminated water in the North Pacific Ocean. Firstly, according to the Ministry of Foreign Affairs the trade of agricultural and fishery goods from Japan has been banned by countries and regions such as China,

Republic of Korea, Thailand, Russia, United States, EU, Egypt, and so on. The purchase avoidance of foods from the contaminated areas has not only been done on a Japanese national scale but also on a global scale. That resembles the case of the Chernobyl nuclear accident in 1986. At that time, most Japanese consumers would have avoided buying many goods like spaghetti, cheese, wine, and mushrooms made in Europe, nevertheless that West Europe is considerably distant from Chernobyl. After the Fukushima nuclear disaster, many prefectures in East Japan have been specified by countries and regions to ban the international trade of foods.

Secondly, the outflow of contaminated water with high levels of radioactivity has caused the severe problem concerning the United Nations Convention on the Law of the Sea. Some nuclear scientists have mentioned in mass media after the accident that contaminated water from Fukushima Daiichi would be fully diffused and diluted by very the large volume of ocean water. However, the author does not think so, because the state of meltdown reactors in Fukushima Daiichi and radioactive materials has never been measured in terms of the accumulated percentage consumed by a food chain of any living organism. Actually, some of famous newspapers in USA reported traces of radiation from Fukushima were detected off California (e.g. *San Francisco Chronicle* Web Edition on November 11, 2014). Some simulation studies have expected a possible diffusion pattern of radioactivity from Fukushima in the North Pacific Ocean (Miyazawa 2011).

Further, it should not be forgotten that on a global scale, the top news of the Fukushima nuclear disaster in March 2011 could have urged a decision to halt the nuclear power plant policy in Europe (e.g. Germany, Spain, and Italy). Obviously, the serious experience of the Fukushima nuclear disaster would not belong to only Fukushima Prefecture. The Level 7 severe accident in Fukushima by International Nuclear Event Scale (INES) will be naturally compared to the similar case of Chernobyl and the Three Mile Island's Level 5 accident in USA.

### **Downward scale and a sense of home**

Even in the Fukushima Prefecture scale, regions are not homogenous. An administrative hierarchy indicates the political order that a superior level organization includes the sublevel one from a set theoretic perspective. Indeed, the central government would regulate local governments. However, people have their own local autonomy guaranteed by the Constitution, and they live in and grasp their own local context not determined by the central government. On the other hand, geographical scales throw strong light on a specific "frame of reference" and "resolution." In the scales of cities and towns, out-migration, decontamination, and returning home have come to matter in the Fukushima Prefecture.

We would show six types of "sense of home," using both concepts of geographical scales and the "Fukushima" situation (Fig. 3). The concept of home implies geographical scales (Blunt and Dowling 2006). The home  $H_1$  to  $H_6$  of Fukushima people and out-migrants are classified as follows. The  $H_1$  is the place outside of the evacuation zone, to live "Fukushima," within Fukushima Prefecture (e.g. *Naka-dori* district, Iwaki city). The  $H_2$  is not to live "Fukushima", but within Fukushima Prefecture (e.g. *Aizu* district). In addition, the  $H_3$  is located outside of the Fukushima Prefecture, but to live "Fukushima," within East Japan (e.g. southernmost parts of the Miyagi Prefecture, eastern parts of Tokyo Metropolitan Area). The  $H_4$  indicates outside of Fukushima Prefecture, not to live "Fukushima," in East Japan (e.g. cities of Sendai, Yamagata, and Niigata: adjacent to the Fukushima Prefecture). The  $H_5$  faces on the "Fukushima" situation, even outside of East Japan (e.g. residents near to other nuclear power plants). Finally the  $H_6$  represents



not to live “Fukushima” as well as outside of East Japan (e.g. Hokkaido, Okayama, and Okinawa). The author would argue that these complicated set relationships have been unfortunately separating residents in the Fukushima Prefecture, out-migrants from Fukushima, and people outside of Fukushima.

The Japanese Government, Fukushima Prefecture, and leading radiologists have declared a “safe” environment in the Fukushima Prefecture on one hand, but it seems that Fukushima people have felt real anxiety in their own lives and expressed the identities of Fukushima in different ways on the other hand. The H<sub>1</sub> people continue to live “Fukushima” situation in order to keep their houses, work places, and local community. Most of them do not always feel their homes safe. The sense of home at H<sub>2</sub> can be largely different from that at H<sub>1</sub>, although both live in the Fukushima Prefecture. In addition, out-migrants from Fukushima at H<sub>3</sub> might have felt “safer” than at H<sub>1</sub>, but at the same time, convenience at H<sub>3</sub> and a different sense of home (in memory and at present place) from at H<sub>1</sub>. Most out-migrants from Fukushima at H<sub>4</sub> have often chosen the separation of household that mother and children moved to H<sub>4</sub> but father and other families stayed at H<sub>1</sub>. That migration is called “voluntary refuge” because the Japanese Government has acknowledged the financial support to only the refugees from the Controlled Area. It is comparatively easy to go and come between separated two households once a week, although the moving and household costs would increase. That seems a pragmatic way of life in which children and mothers can avoid a high risk of radiation exposure and other family members can continue the original house and work at H<sub>1</sub>. Residents at H<sub>5</sub> can find the “Fukushima” situation in their daily lives such as at a lunch table. Finally, out-migrants at H<sub>6</sub> seem to escape from the “Fukushima” situation. People at H<sub>4</sub> and H<sub>6</sub> share the same motivation of children’s health and safety, but differ in senses of home Fukushima. The author thinks that the H<sub>4</sub> migrants would cope with family life in a radioactive world, and the H<sub>6</sub> migrants would run a risk of family diaspora and home loss to keep children’s health that will work for the future of Fukushima for the long-term.

In short, several types of migrants have been out of or within the Fukushima Prefecture, and they would have made different geographical senses of home to Fukushima. It is important to emancipate the identification of Fukushima with the Fukushima Prefecture to understand several ways of life and ideas in the “Fukushima” situation.

## 5. Conclusion

This paper examines politics of space via the place name Fukushima after the nuclear disaster. The author proposes a situation name that is distinct from place name, and applies a scale perspective to radioactive geography. Proper name including place name has a function to fix a reference according to analytical philosophy. Japanese mass media and government offices have specifically stressed the scale of prefecture, but that contradicts the physical geography caused by the nuclear disaster and the diverse ways of life and behavior in the “Fukushima” situation.

Human geographers have studied the case of the Three Mile Island and Chernobyl nuclear accidents. In the Three Mile Island accident, the evacuation behavior (Cutter and Barnes 1982: Zeigler *et al* 1982) and the siting policy of nuclear power (Openshaw 1986) have been studied, immediately. And after the Chernobyl accident, some geographers examined the disposal of nuclear waste (Openshaw *et al* 1989) and the North and East Europe geography caused by the

accident (Gould 1990). In the Fukushima nuclear disaster, many studies should be explored in geography as well. The Fukushima nuclear disaster may be historically the worst affair in the world because that is still uncertainly continuing, where invisible geographies of radioactivity matter.

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