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Risk Assessment of Nuclear Power by Japanese Newspapers Following the Chernobyl Nuclear Disaster

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This article examines how the editorial sections of three Japanese national newspapers *The Asahi*, *The Yomiuri*, and *The Nihon Keizai* discussed Japan's nuclear safety following the Chernobyl nuclear disaster. This article starts by describing the relationship between Japanese newspapers and Japan's nuclear policy before the major disaster, which allows for analyses of the editorials. Three key findings emerged. First, the newspapers sought to enhance nuclear safety, but did not critically discuss any possibilities related to giving up nuclear power. Second, *The Asahi* and *The Nihon Keizai* used historically loaded symbols in their risk assessment. Third, *The Yomiuri* and *The Nihon Keizai* dismissed public concerns about nuclear risk, while *The Asahi* promoted dialogue between concerned citizens and policymakers following the disaster.

Keywords: Chernobyl, history, newspapers, Japan, editorials

The Tohoku earthquake and tsunami of March 11, 2011, and the Fukushima nuclear crisis that followed were an unprecedented catastrophe in modern Japanese history. These disasters have raised a critical question for communication scholars: How can we engage in the ongoing Fukushima nuclear crisis? This article is an attempt to address this question by analyzing, in a historical context, the role of Japanese mass media in influencing Japan's nuclear energy policy. Before and after the disaster, many critics and scholars maintained that Japanese national newspapers had played a significant role in promoting the country's nuclear policy by propagating the idea of the peaceful use of nuclear technology in the 1950s (Arima, 2008; Ikawa, 2002; Inose, 1990; Kitahara, 2011; Kuznick, 2011; Sano, 1994; Shimura, 2011; Takekawa, 2012; Yoshimi, 2012a, 2012b; Zwigenberg, 2012). This article takes the same critical stance, with a different perspective not well discussed in the previous literature.

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There is an irony at the heart of Japan's nuclear policy. Despite being the only country to have been affected by atomic bombings, Japan has embraced the idea of the peaceful use of nuclear technology and has been heavily dependent on nuclear power since 1954. While nuclear power accounted for around 30% of Japan's total domestic power production before the Fukushima nuclear accident, it should be emphasized that until 1973 the country actually generated only 2.6% of its electrical power from nuclear reactors (Shigen enerugī chō, 2012). That is, it is important to note Japan's increasing dependency on nuclear energy *after* the first oil crisis of 1973. However, Japan simultaneously witnessed a series of nuclear accidents within the country and beyond: the 1974 Mutsu radiation accident, the 1979 Three Mile Island accident, the 1986 Chernobyl nuclear disaster, and the 1999 Tōkaimura criticality accident. The question, then, is despite these nuclear accidents, why did Japan maintain a gradual rise in its dependency on nuclear energy? What kind of role did Japanese mass media play in influencing Japan's nuclear safety policy during this period?

The Fukushima nuclear accident is better understood if we study the risk assessment of nuclear power made by Japanese mass media after the first oil shock of 1973. However, little attention has been paid to this practice **(**Itou, 2005; Jōmaru, 2012; Oyama, 1999; Nanasawa, 2008). For instance, some scholars have focused exclusively on examining editorials in *The Asahi* in terms of its risk assessment of nuclear power in the wake of the Chernobyl disaster (Itou, 2005; Oyama, 1999). Moreover, Nanasawa (2008) illustrates how the Nihon Hōsō Kyōkai (NHK), or Japan Broadcasting Corporation, has portrayed nuclear safety in Japan since the 1950s. With few exceptions (Jōmaru, 2012), however, not enough substantive comparative research has been done on Japanese mass media's risk assessment of nuclear power. Indeed, such an approach is useful for investigating common and distinct elements of the media's stance on nuclear power; therefore, this article seeks to contribute to a relatively scarce body of research that examines the role of Japanese mass media in evaluating the risk of nuclear power from a comparative perspective.

The reason for considering mass media's role in assessing Japan's nuclear risk is to address a fundamental question in the wake of the Fukushima Daiichi nuclear disaster: How did the risk assessment of nuclear power by Japanese media contribute to the development of the country's nuclear safety policy? This approach is significant because the Fukushima nuclear crisis resulted largely from Japan's lack of nuclear disaster preparedness (Funabashi, 2012; Hasegawa, 2012; Higuchi, 2012; Kokkai Jikochō, 2012; Nihon Saiken Initiative, 2012; Perrow, 2011; Yoshioka, 2011). For example, the Nihon Saiken Initiative, or "The Rebuild Japan Initiative Foundation" (2012), reported that *Anzen shinwa*, or the "myth of absolute safety [of nuclear power plants]," discouraged government officials and top management personnel of the Tokyo Electric Power Company (TEPCO) from dealing with uncertainties regarding nuclear safety before the Fukushima nuclear accident. Given the assumption of the absolute safety of nuclear power, it was difficult for them to raise critical questions about the possibility of a nuclear disaster. Although this episode epitomizes the nature of Japan's poor risk assessment of nuclear power, it is important not to interpret what occurred at Fukushima as only a Japanese cultural mishap (Higuchi, 2012). As Toshihiro Higuchi (2012) suggested, it is necessary to approach the Fukushima nuclear accident from the perspective of Japanese policy and its structural problems as well.

We should note that Japanese mass media never solely promoted Japan's nuclear policy: mass media is only one of the entities that has influenced Japan's nuclear energy policy (Kainuma, 2011; Pickett, 2002). For instance, Daniel P. Aldrich (2008) emphasized the role of the Japanese government in backing Japan's nuclear policy, and showed that in siting nuclear plants, Japanese state agencies made an effort to address the concerns of an antinuclear civil society by using various incentives, including subsidies offered to host communities. In doing so, Japanese bureaucrats developed public relations campaigns that attempted to emphasize the safety of these plants. Moreover, other scholars have indicated that juridical environments could be a critical factor in promoting nuclear energy policy (Tabusa, 1992; Upham, 1987). For example, Keiko Tabusa (1992) demonstrated that despite citizens' concerns about nuclear risk, Japanese courts always ruled in favor of the government and nuclear power companies.

While these factors may have fostered an environment amenable to the promotion of nuclear energy policy, this study concentrates on analyzing the relationship between Japanese mass media's risk assessment of nuclear power and Japan's nuclear energy policy in a broader historical context. Considerable effort has been invested in studying the connections between mass media and the government in postwar Japan (Feldman, 1993; Freeman, 2000; Hall, 1998; Krauss, 2000; Matsuda, 1980, 1981; Pharr & Krauss, 1996; Sasaki, 1999; Van Wolfren, 1989; Watanabe & Nohara, 2000). For example, much scholarship has critically analyzed the cozy relationship between mass media and their news sources, such as bureaucrats and politicians, and illustrated how Japanese mass media served the interests of the government in numerous ways (Feldman, 1993; Freeman, 2000; Hall, 1998; Krauss, 2000; Van Wolfren, 1989; Watanabe & Nohara, 2000). In other words, past research has indicated that Japanese mass media rarely acted as a check on the government and nuclear industry. This study aims to contribute to the previous literatures about the connections between Japanese mass media and the government in terms of their risk assessment of nuclear power.

In doing so, this article focuses on examining Japanese mass media's risk assessment of nuclear power following the Chernobyl nuclear disaster, which provides a major advantage. Among nuclear accidents, including the Mutsu accident of 1974, Three Mile Island in 1979, and the 1999 Tōkaimura Criticality Accident, the Chernobyl disaster particularly contributed to the rise of antinuclear sentiment throughout Japan at least until the beginning of the 1990s (Yoshioka, 2011). For instance, books about nuclear risk became best sellers in Japan (Hosei Daigaku Ohara Shakai Mondai Kenkyujo, 1989; Tabusa, 1992; Yoshioka, 2011). In particular, books written by Takashi Hirose, a notable Japanese antinuclear journalist, were enormously well received by the public, prompting the coining of the term "Takashi Hirose Phenomenon" (Hosei Daigaku Ohara Shakai Mondai Kenkyujo, 1989; Yoshioka, 2011). In addition, the surge of post-Chernobyl antinuclear sentiment was referred to as the "Stop Nuclear Power Plant New Wave" and, two years after the Chernobyl accident, approximately 20,000 people attended a national convention about the accident in 1988 (Yoshioka, 2011).

William A. Gamson (1988) showed that in the United States, mass media discourse about nuclear power changed following the Three Mile Island accident and the Chernobyl disaster partly because of antinuclear movements. The question then becomes, given growing public concerns about nuclear power following Chernobyl, how did Japanese mass media practice risk assessment of nuclear power plants? This

question is particularly significant in the wake of the Fukushima nuclear accident precisely because networked antinuclear movements emerged throughout the country following the disaster (Ogawa, 2013; Williamson, 2012). Whereas it is important to study Japanese mass media's assessment of the risks of nuclear power after the Mutsu accident, Three Mile Island, and the Tōkaimura Criticality Accident, space prohibits any detailed examination of mass media's stance on nuclear risk following these incidents: Such analysis is outside of the scope of this study. Instead, this study seeks to enhance our understanding of Japanese mass media's response following the Fukushima nuclear accident.

A full exploration of the relationship between Japanese mass media's risk assessment of nuclear power and Japan's nuclear energy policy requires an analysis of both Japanese mass media and Japan's nuclear energy policy over the Chernobyl accident. However, the purpose and delimitation of this research are more modest. This study examines editorials of Japanese national newspapers concerning Japan's nuclear safety after Chernobyl. Focusing on editorials provides two advantages. First, such an analysis will indicate the distinct characteristics of individual Japanese national newspapers' risk assessment of nuclear power in isolation from the "objectivity" norm in Japanese journalism. Previous scholarship has shown how newspaper editorials can be deliberately constructed to handle sensitive topics such as nuclear safety in isolation from the principle of objective journalism (Firmstone, 2003; Itou, 2005; Lee & Lin, 2006). Thus, an examination of editorials will help illustrate the nature of individual Japanese national newspapers' evaluation of the risks of nuclear power. Second, since Japanese national newspapers have financial and informational ties to Japanese national commercial television networks (Freeman, 2000), an analysis of editorials in Japanese national newspapers will help indicate the nature of risk assessment of nuclear power by the wider mass media. While it is important and necessary to analyze the whole coverage of Japanese national newspapers and television networks, this study focuses on the editorials of Japanese national newspapers for the reasons described above.

Nuclear Power in Postwar Japan

In order to illustrate the Japanese newspapers' risk assessment of nuclear power following the Chernobyl accident, it is useful to trace the relationship between Japanese newspapers and Japan's nuclear energy policy in a Cold War context. Arguably, the origin of Japan's nuclear energy policy can be traced to the Eisenhower administration's "New Look" doctrine and "Atoms for Peace" policy (Arima, 2006; Kuznick, 2011; Osgood, 2006; Sano, 1994; T. Tanaka & Kuznick, 2011; Yoshimi, 2012a, 2012b). While the "New Look" doctrine was aimed at deterring a Soviet attack by equipping American bases around the globe with nuclear weaponry, it also needs to be understood as an evolving U.S. Cold War defense strategy through non-military means such as psychological warfare operations designed to best the Soviet Union in the arena of political competition (Osgood, 2006; Yoshimi 2012a). As part of the psychological warfare operations, Eisenhower delivered a historic speech titled "Atoms for Peace" at the United Nations General Assembly in December 1953, in which he not only discouraged the Soviet Union from further developing nuclear weapons but also promoted atomic materials for peaceful purposes among U.S. allies (Yoshimi, 2012a). Eisenhower's "Atoms for Peace" speech also urged Japanese political elites to promote a shift in Japan's energy policy toward nuclear power (Arima, 2008; Sano, 1994; Yoshimi, 2012a, 2012b). A shortage of energy resources was one of the biggest reasons for Japanese aggression before and during World War II; this desire for self-sufficiency may continue to be a strong driving force affecting Japan's

nuclear energy policy (Hein, 1990; Pickett, 2002; Yoshioka, 2011). It was no wonder, then, that Japanese political elites considered nuclear technology as a long-term solution to Japan's energy shortage. Therefore, the United States' Cold War strategy and Japan's longstanding energy concerns paved the way for the wholehearted embrace of nuclear power.

Whereas the origin of Japan's nuclear energy policy can be traced to the Eisenhower administration's Cold War strategy, it should be underscored that major Japanese national daily newspapers such as *The Asahi* and *The Yomiuri* unanimously distinguished the peaceful use of nuclear technology from the use of nuclear weapons, expressing support for the former in the late 1940s, when Japan was occupied by the Supreme Commander of the Allied Powers (SCAP; Takekawa, 2012). While the Japanese mass media were strictly censored by SCAP during the occupation period (1945–1952), the propagated discourse of the distinction between the peaceful use of nuclear power and the use of evil nuclear weaponry paved the way for Japanese mass media to promote the country's nuclear energy policy from the 1950s onward. For example, most scholars agree that Matsutarō Shōriki, owner of *The Yomiuri*, played a critical role in stimulating Japan's energy policy shift toward nuclear power by harnessing the rhetoric of "Atoms for Peace" (Arima, 2006, 2008; Inose, 1990; Sano, 1994; Yoshimi, 2012a, 2012b). In order to promote Japan's shift to nuclear power, Shōriki, as owner of the then-third largest national daily newspaper in circulation, not only collaborated with Japanese political elites but also operated behind the scenes with the United States. It was strategically significant for the United States to have Japan to embrace nuclear power plants because the introduction of these facilities to Japan served to suppress the country's memories of Hiroshima and Nagasaki (Arima, 2008; Inose, 1990; Levey, 1954; Y. Tanaka & Kuznick, 2011). On the other hand, Shōriki tactically took advantage of the United States' Cold War strategy for his own political ends; Shōriki had a reason to propagate the idea of "Atoms for Peace" aggressively. Because he had political ambitions to become prime minister of Japan, he was also willing to use the introduction of nuclear power as one of his political campaign tools (Arima, 2008; Inose, 1990).

On January 1, 1954, *The Yomiuri* began to promote an all-out campaign titled *Tsuini taiyō o toraeta*, or "We have finally caught the sun," in support of the peaceful use of nuclear technology. Notably, one of the series of articles in the campaign linked Japanese experiences of Hiroshima to the idea of the peaceful use of nuclear power (*The Yomiuri Shimbun*, 1954). In an article titled *Hiroshima ni jinrui hatsu no genbaku*, or "The first atomic bomb in human history hit Hiroshima," *The Yomiuri* stated that future research on nuclear power should be viewed as fundamentally good for the future of Japan, and emphasized that the Japanese people had an obligation to promote the peaceful use of nuclear technology rather than the evil use of nuclear weaponry *precisely because* Japan was the only country that had been affected by the atomic bomb. By dichotomizing the peaceful use of nuclear technology from nuclear weaponry, *The Yomiuri* tactically reframed the memory of Hiroshima as a symbolic resource to promote the technology alone.

Two months later, however, negative opinion about nuclear power emerged in public discourse when the Lucky Dragon incident came to light (Ōishi, 2011). On March 1, 1954, a Japanese tuna fishing boat named Daigo Fukuryūmaru, or Lucky Dragon No. 5, with 23 fishermen aboard was exposed to the Castle Bravo thermonuclear device test on the Bikini Atoll near the Marshall Islands. Aikichi Kuboyama, one of the fishermen who suffered from acute radiation syndrome, died on September 23, 1954. In spite

of, or perhaps because of, the huge antinuclear movements that emerged following the incident, Japanese national newspapers continued to propagate the idea of the peaceful use of nuclear technology (Ikawa, 2002; Takekawa, 2012; Yoshimi, 2012a, 2012b). For instance, the Peaceful Use of Nuclear Power Exhibition, which was sponsored by *The Yomiuri* at Hibiya Park, Tokyo, and ran from November 1 to December 12, 1955, was attended by 367,669 people (Arima, 2008). While the exhibition began in Tokyo, it was also sponsored by *The Asahi* in Kyoto and Osaka (Yoshimi, 2012b).

In February 1955, Shōriki was elected as a member of the House of Representatives, and ultimately became the first chief of the Atomic Energy Commission of Japan (AEC) in 1956. Seven years later, in 1963, the first Japanese nuclear reactor began operations in Ibaraki Prefecture. There were serious concerns about the risks entailed by Japan's nuclear reactors almost from the start, however, because of the high risk for earthquakes in the country (Norwood, 1971). In addition, a poll conducted by the General Administrative Agency of the Cabinet of Japan showed that at least 40% of the Japanese people agreed in 1969 that "it stands to reason that we are particularly anxious about [nuclear power]. The more anxious we are, the better we will be" (Shibata & Tomokiyo 1999, p. 21). Nevertheless, the Japanese government and TEPCO may not have adequately taken into account these concerns about nuclear safety. Six Fukushima Daiichi nuclear reactors were constructed from 1967 to 1973.

After the 1973 oil shock, the Japanese government facilitated nuclear power as a renewable energy resource in order to decrease dependency on oil from the Middle East. While Japanese political elites became concerned about energy shortages (Aldrich, 2008; Avenell, 2012), historian Hitoshi Yoshioka (2011) mentioned that the aggressive construction of Japan's nuclear power plants could not have been due to Japan's awareness of its lack of energy resources alone, and instead argued that the Japanese government had constructed nuclear plants for its own sake after the early 1970s. Despite the formation of antinuclear power organizations such as the Citizen's Nuclear Information Center and the large anti-nuclear movements following the Three Mile Island nuclear accident (Aldrich, 2008; Tabusa, 1992), Japan sharply increased its dependency on nuclear power in the 1980s (Yoshioka, 2011). According to Low, Nakayama, and Yoshioka (1999), there was a certain complacency about Japan's nuclear technology in the 1980s. Indeed, nuclear power was seen as a resource to "fuel a technological and economic success story" in that period (Avenell, 2012, p. 28). Despite serious nuclear accidents such as the Mutsu accident, Japan was building nuclear reactors at least until the end of 1997, eight years after the end of the Cold War (Mainichi Shimbun, 2011).

The existing literature indicates that the first oil shock similarly had an influence on Japanese mass media (Shimura, 2011; Suzuki, 1983). While some of the Japanese national daily newspapers such as *The Asahi* were more or less critical of the country's nuclear safety policy, the newspaper agency stopped discussing the issue of nuclear danger and started to sell advertising space to nuclear power companies in the wake of the energy crisis of 1973, precisely because the crisis had reduced its advertising income (Shimura, 2011). In practice, however, *The Asahi* and other national newspapers never critically discussed Japan's dependency on nuclear energy at the expense of safety because none of them ever expressed disapproval of nuclear power per se. Given the historical context, then, how did Japanese newspapers evaluate nuclear risk following the Chernobyl nuclear accident?

This section relates the historical context that shaped Japanese newspapers' risk assessment of nuclear power following the Chernobyl accident, and shows that Japanese newspapers clearly viewed the peaceful use of nuclear power as one category and the evil use of nuclear weaponry as another, which can be seen as moral claims. More specifically, this discourse should be understood in a Cold War context in which both the United States and Japan introduced nuclear power to Japan's soil for different purposes. Given that context, newspapers, *The Yomiuri* in particular, reframed Hiroshima and Nagasaki as symbolic resources in order to promote the peaceful use of nuclear power. As will be discussed below, the symbols of "atomic bombs," a tragedy for Japan, and "the peaceful use of nuclear power" were transformed into a form of risk assessment of nuclear power following the Chernobyl accident. Moreover, this section suggests that Japan aggressively constructed nuclear power plants after the first oil shock and that Japanese industrial successes in the 1970s and 1980s helped contribute to the Japanese government's complacency about nuclear technologies. On the other hand, Japanese mass media did not discuss the issue of nuclear danger, given that the oil shock affected their business, which contributed to shaping discourses related to the risk of nuclear power.

The Media Package Approach

In order to analyze the content of editorials that focused on nuclear safety after the Chernobyl disaster, this study attempts to draw on the analytical concept of a media package approach. Employing Todd Gitlin (1980)'s concept of media frames, William A. Gamson and Andre Modigliani (1989) examined how media discourse about nuclear power provides contexts for the public's interpretations. Rather than making causal assumptions that media framing shaped the public opinion, Gamson and Modigliani (1989) analyzed media discourse about nuclear power "as a set of interpretative packages that give meaning to an issue" (p. 3) and assumed that since mass media constantly provide interpretative contexts, "the content can be used as the most important indicator of the general issue culture" (p. 3). According to Gamson and Modigliani, there are at least three different determinants that helped shape the characteristics of certain package together: cultural resonance, sponsor activities, and media practices. Cultural resonance assumes that "certain packages have a natural advantage because their ideas and language resonate with larger cultural themes" (p. 5), and allows us to examine certain packages and their narratives as symbolic devices in a larger cultural context. Sponsor activities indicate the role of "sponsors," those who are interested in promoting nuclear energy policy, including public officials and the AEC, in shaping media packages. Finally, media practices focus on the role of journalists' working norms in shaping media packages.

While the media package model was originally constructed as an analytical concept to study American mass media's discourse on nuclear power, this concept can also help us better analyze Japanese newspapers' risk assessment of nuclear power following the Chernobyl accident. Though Gamson and Modigliani originally examined three classes of determinants that help construct particular media packages, the present study focuses primarily on the first two determinants because they are particularly relevant to the analysis of Japanese newspaper editorials' risk assessment of nuclear power. As Gamson and Modigliani suggested, the media package model treats the media content of discourse on nuclear power as "the outcome of a value-added process" (p. 5), and helps trace the development of discourses on Japanese newspapers' risk assessment of nuclear power over time after the Chernobyl accident.

Whereas symbolic devices that Japanese mass newspapers used may or may not be accepted by the audience (Gamson & Modigliani, 1989), the media package model similarly allows for an analysis of the rhetorical strategies that Japanese mass media employed in their risk assessment of nuclear power.

As illustrated below, Japanese newspapers' risk assessment of nuclear power after the nuclear disaster could be interpreted within what Gamson and Modigliani (1989) labeled as a *progress* package, or a media package that "frames the nuclear power issue in terms of the society's commitment to technological development and economic growth" (p. 4). Although Gamson and Modigliani indicated that every package cannot be necessarily identified with a clear-cut position for or against nuclear policy, Japanese newspaper editorials never did oppose the technological development of nuclear power following the Chernobyl accident, and ultimately contributed to the development of the *progress* package. The question, then, is what kind of rhetorical strategy did Japanese newspaper editorials employ in their assessment of nuclear risk following Chernobyl? Is there any cultural and social context that shaped the ways in which Japanese editorials generated interpretative packages that gave meaning to nuclear risk following the Chernobyl accident? The next section addresses these questions by drawing on the media package model and examines how Japanese newspaper editorials dealt with public concerns about nuclear risk during the period when the public discourse about antinuclear policy emerged (Yoshioka, 2011).

Japanese Newspapers' Risk Assessment of Nuclear Power after Chernobyl

Data Set

The editorials used for the present study were retrieved from the online archives of the Tokyo editions of three Japanese national newspapers: *The Asahi*, *The Yomiuri*, and *The Nihon Keizai*. *The Asahi* and *The Yomiuri* were chosen because they are the two of the largest-circulation national newspapers in Japan: *The Asahi* represents a Japanese liberal daily, whereas *The Yomiuri* is viewed as a conservative daily. *The Nihon Keizai* was also included due to its influence in Japanese business industry. Given that post-Chernobyl antinuclear movements fell into a decline after the early 1990s (Yoshioka, 2011), editorials were selected from a four-year period after the 1986 Chernobyl disaster. Only editorials addressing Japan's nuclear safety were chosen for analysis. Editorials that appeared not to be explicitly related to Japan's nuclear safety were excluded during the coding process. Specifically, they constitute all the editorials that refer to "nuclear power" and "safety" published by the three newspapers from April 26, 1986, to April 26, 1990. The unit of analysis was an editorial. Textual corpus consists of 27 editorials (*The Asahi*), 24 editorials (*The Yomiuri*), and 23 editorials (*The Nihon Keizai*). Drawing on the media package model, I conducted content analysis of these editorials by using standard coding and proposing two dominant media packages: "Enhancing nuclear safety" and "Japan's nuclear safety excellence" packages. Within the "enhancing nuclear safety" package, the code provides such categories as "nuclear safety should be enhanced in Japan." The package assumes that nuclear safety can be ensured with further efforts. The other dominant media package can be labeled as "Japan's nuclear safety excellence package." Within this media package, the code provides categories such as "Since Japan is excellent about nuclear safety, we should contribute to international society by using excellent Japanese nuclear safety technology." As indicated in the previous section, Japanese newspaper editorials never seriously reconsidered Japan's dependency on nuclear energy after the Chernobyl accident. By generating two

dominant media packages, Japanese newspaper editorials contributed to framing nuclear power in terms of Japan's commitment to the technological development of nuclear power (the *progress* package). The following is the ratio of each media package (see Table 1).

Table 1. Thematic Categories of Editorials Following the Chernobyl Accident.

Editorials	Enhancing nuclear safety	Japan's nuclear safety excellence	Others	Total
Asahi	14	5	8	27
Yomiuri	14	5	5	24
Nihon Keizai	12	5	6	23

Enhancing Nuclear Safety

The Chernobyl nuclear accident was a truly global catastrophe in scale. On April 26, 1986, an explosion at the Chernobyl nuclear power plant released nuclear radiation that spread beyond the Ukraine into Europe and other parts of the Soviet Union. Nevertheless, no Japanese newspaper editorial drastically reconsidered Japan's nuclear safety and instead emphasized the need to enhance nuclear safety alone. In the initial editorials about the accident, both *The Asahi* and *The Nihon Keizai* discussed the issue of the country's nuclear safety thoroughly, while *The Yomiuri* linked the accident solely to the issue of the Soviets' nuclear safety, never discussing Japan's safety in relation to this major disaster. *The Asahi* stated on May 1, 1986:

> Since we cannot reasonably wish for "absolute safety," nuclear power plants, like other technologies, are not completely unrelated to accidents or trouble. The important thing is getting harmful effects on people closer and closer to zero. In so doing, it is required [for us] to make efforts to exhaust possibilities to examine accidents and trouble that have occurred around the world, and to take advantage of these lessons beyond national boundaries. (*The Asahi Shimbun*, 1986a)

Whereas *The Asahi* explicitly denied the myth of the absolute safety of nuclear power, the paper still believed that nuclear danger could be reducible to close to zero by making more serious efforts to ensure the safety of nuclear power. "Making more serious efforts" became a thematic statement for constructing the media package without further explanations. One of the reasons why this package appeared can be better understood in a historical context. As shown previously, Japanese society had already embraced the peaceful use of nuclear power, which was clearly distinguished from the nuclear weaponry that had devastated Hiroshima and Nagasaki, and the country had become somewhat overconfident about the safety of nuclear power plants by the late 1980s. This optimistic thematic statement paved the way for Japanese newspapers to contribute to the development of this media package.

By the same token, *The Nihon Keizai* discussed Japan's nuclear safety in relation to Chernobyl from the start of the accident. While not addressing the issue of Japan's safety in its initial editorial about the disaster (*The Nihon Keizai Shimbun*, 1986a), *The Nihon Keizai* similarly maintained on May 20, 1986, that Japan should draw a lesson from the catastrophe "to achieve the highest possible levels of nuclear safety and security" (*The Nihon Keizai Shimbun*, 1986b, p. 2). On the other hand, *The Yomiuri* did not express a clear intention to draw a lesson from the disaster in its initial editorial. On May 14, 1986, *The Yomiuri* harshly criticized the Soviets' poor risk management practices and asserted that "such an incident could never happen at nuclear reactors in the West" (*The Yomiuri Shimbun*, 1986a, p. 3). This narrative that "Western nuclear technologies are different from those of the Soviets" can be also better understood in a historical context. As discussed above, *The Yomiuri* promoted the "Atoms for Peace" campaign aggressively in order to support nuclear energy policy along with the United States; this reaction to Chernobyl places *The Yomiuri*'s political claims in a Cold War context.

Thus, an analysis of the first editorials about the Chernobyl nuclear disaster shows that there were differences in terms of their risk assessment of Japan's nuclear safety. While *The Asahi* and *The Nihon Keizai* emphasized the need for Japan to achieve the highest possible levels of safety by drawing a lesson from the accident, *The Yomiuri* initially differentiated the issue of Japan's nuclear safety from that of the Soviets. Simultaneously, however, *The Yomiuri* particularly highlighted the value of nuclear power following the accident. On May 26 1986, for example, *The Yomiuri* emphasized the need to "ensure nuclear safety rather than to give up nuclear power through the fear of nuclear power" (*The Yomiuri Shimbun*, 1986b, p.3). In its August 21 editorial, while restating that nuclear disasters could never occur in Japan, *The Yomiuri* briefly drew lessons about human errors from the accident (*The Yomiuri Shimbun*, 1986c). On August 31, 1986, *The Yomiuri* maintained that it was necessary to regain credibility for nuclear power after the Chernobyl accident and reiterated the need to make nuclear power safer (*The Yomiuri Shimbun,* 1986d).

In spite of their initial difference in their assessment of nuclear risk, the three newspaper editorial sections repeatedly emphasized the need for nuclear power in Japan by providing a wide variety of symbolic devices. For instance, *The Asahi* underscored the significance of implementing full-scale preparations for nuclear disasters (*The Asahi Shimbun*, 1986b, 1988e, 1989a, 1989b). Moreover, *The Asahi* criticized the way in which Japan's nuclear industry and the Ministry of International Trade and Industry (MITI) spent too much money for their public relations (PR) strategy (*The Asahi Shimbun*, 1989c). Whereas *The Asahi* clearly noted that overspending for PR would not help in building a nuclear safety culture, *The Asahi* nonetheless praised the *Yearbook of nuclear safety*, drafted by the AEC, in terms of its efforts to explain nuclear technology clearly. In doing so, *The Asahi* suggested that there should be better PR strategies for the nuclear industry. That *The Asahi* preferred improved PR strategies for the nuclear industry not only contributed to the development of this media package but also indicated the role of the nuclear industry as a "sponsor" in influencing the package.

The Nihon Keizai also noted that enhancing nuclear safety was an urgent concern that necessitated tireless effort (*The Nihon Keizai Shimbun*, 1986e, 1987a). Furthermore, *The Nihon Keizai*

discussed radioactive waste on October 13, 1988, and argued that it was necessary to deal with such waste if nuclear power were to be used in the future (*The Nihon Keizai Shimbun*, 1988c). Notably, "radioactive waste," which is usually seen as one of the most controversial issues related to nuclear power production in terms of its environmental effects, was also utilized by *The Nihon Keizai* as a symbolic resource to enhance nuclear safety. This narrative indicates as well *The Nihon Keizai's* political claims for a nuclear energy policy. Finally, *The Yomiuri* harnessed the symbolic devices of "super-safe nuclear reactors" (*The Yomiuri Shimbun*, 1987a), the issue of energy shortage, and the environmental friendliness of nuclear power (*The Yomiuri Shimbun*, 1987c, 1988b, 1988c, 1989b, 1990) in order to promote nuclear power. In particular, the narrative "nuclear power is environmentally friendly" is worth mentioning. While stressing the importance of nuclear power as a solution to Japan's lack of energy resources, *The Yomiuri* simultaneously reframed the issue of nuclear power as a solution to an environmental problem by utilizing this narrative. *The Yomiuri* argued that in order to solve both energy and environmental problems, it was necessary to enhance nuclear power, which contributed to the development of this media package. Therefore, the three Japanese newspapers never criticized nuclear power in their editorials following the Chernobyl nuclear disaster and focused exclusively on discussing ways in which nuclear safety could be ensured.

Japan's Nuclear Safety Excellence

Another dominant media package is "Japan's nuclear safety excellence." In hindsight, this package reveals Japanese newspapers' poor risk assessment of nuclear power. Some editorials bragged about Japan's excellence in nuclear safety, but simultaneously warned their readers not to become complacent (*The Asahi Shimbun*, 1986c; *The Nihon Keizai Shimbun*, 1986c, 1987b; *The Yomiuri Shimbun*, 1987b, 1989a). An analysis of this media package shows the distinct rhetorical strategies Japanese newspapers employed in their risk assessment. On October 31 1986, the AEC issued the *White Paper on Nuclear Energy*, and indicated that, since Japan was excellent in its management of operational safety in nuclear power plants, it should contribute to the development of nuclear technology for the benefit of all humanity (Genshiryoku Iinkai, 1986). The three newspapers more or less unanimously embraced the AEC's evaluation of Japan's nuclear safety. Given this white paper, *The Asahi* emphasized the significance of contributing to the development of international nuclear safety and maintained that

> Japan's safety management of nuclear power may serve in no small part as a useful reference for foreign countries. Given that Japan is the only country that was affected by atomic bombs, Japanese nationals have kept a strict and critical watch over its safety management of nuclear power. (*The Asahi Shimbun*, 1986c)

The Asahi rhetorically linked Japan's excellent record on nuclear safety to the country's horrific memories of atomic bombs. Notably, the theme of "the only country that was affected by atomic bombs" played a role in shaping *The Asahi*'s risk assessment of nuclear power following the Chernobyl accident. The logic of its assessment of the risk of nuclear power was that, because Japan was the only country that had been affected by atomic bombs, its nuclear safety must be excellent. This narrative of national self-victimization was important to *The Asahi*'s risk assessment of nuclear power. Similarly, *The Nihon Keizai* harnessed the theme of Japan's experience of atomic bombs in its risk assessment of nuclear power, and

expressed its eagerness to inform foreign countries about Japan's excellent management of operational safety in nuclear reactors as follows:

> Maintaining the reliability and the safety of [nuclear power] in the future, Japan should provide all countries of the world with a broad range of its information on [its management of operational safety in nuclear power plants]. As the only country that was affected twice by atomic bombs, on Hiroshima and Nagasaki, Japan has remained committed to the peaceful use of nuclear power. . . . Despite its economic and technological success, Japan needs to overcome the egoism that allows Japan to enjoy [its success] at home alone. The time has come for Japan to show the feasibility of the "peaceful and safe atom" to the whole world. (*The Nihon Keizai Shimbun*, 1986d, p. 2)

Thus, the theme of "Hiroshima and Nagasaki" contributed to the media package of Japan's nuclear safety excellence. Within this package, however, both *The Asahi* and *The Nihon Keizai* did not always draw on the theme of the atomic bomb alone (*The Asahi Shimbun*, 1987a, 1987b, 1987c, 1988f; *The Nihon Keizai Shimbun*, 1988e, 1989b, 1990). For instance, on June 24, 1987, *The Asahi* employed the symbolic device of "the peaceful use of nuclear power" to ensure nuclear safety.

> It is hoped that as a country with peaceful use of nuclear power, [Japan] plays a leading role [in providing a super-safety nuclear reactor to developing countries]. . . . First and foremost, it is hoped that as proactive and active action, our nuclear developmental policy with principles of "peaceful use of nuclear power" and "openness" should be spread to the world. It is because it will result in enhancing the safety of nuclear power. (*The Asahi Shimbun*, 1987a, p. 5)

The theme of "the peaceful use of nuclear power," which originated from the United States' Cold War strategy, similarly mattered in *The Asahi*'s risk assessment of nuclear power. While such themes as atomic bombings and the peaceful use of nuclear power were harnessed by both *The Asahi* and *The Nihon Keizai*, *The Yomiuri* did not employ these historically loaded symbolic devices, and instead emphasized the role of Japanese management culture in shaping nuclear safety around the world (*The Yomiuri Shimbun*, 1986e, 1986f). For instance, *The Yomiuri* asserted on November 6, 1986, that Japan is "excellent in its management of operational safety in nuclear power plants," and went so far as to say that the "time has come when Japan plays a role in enhancing the nuclear technology around the world" (*The Yomiuri Shimbun*, 1986e, p. 3). Rather than utilizing the themes of national self-victimization as well as the Cold War-derived terminology, *The Yomiuri* emphasized the role that Japan should aspire to play in international society as an alternative theme in developing this media package.

Dealing with Public Concerns About Nuclear Risk

Following Chernobyl, public concerns about nuclear risk increased. Accordingly, Japanese newspapers constructed narratives to address public concerns about this risk. Whereas *The Asahi* emphasized the need to promote dialogue between concerned citizens and policymakers (*The Asahi*

Shimbun, 1988a, 1988b, 1988c, 1988d), *The Yomiuri* focused on how to alleviate the public's anxieties about nuclear power (*The Yomirui Shimbun*, 1988a, 1988b, 1989c, 1989d). *The Nihon Keizai* downplayed such concerns and dismissed them as irrational (*The Nihon Keizai Shimbun*, 1988a, 1988b, 1988d, 1989a, 1989c). For instance, *The Asahi* argued on July 6, 1988, that local and national governments should provide space for a discussion between concerned residents and representatives of the nuclear industry (*The Asahi Shimbun*, 1988a). *The Yomiuri*, on the other hand, on June 11, 1988, argued that the government should take a proactive approach in convincing concerned citizens about the safety of nuclear power (*The Yomiuri Shimbun*, 1988b). Finally, *The Nihon Keizai* declared, on February 10, 1988, that Japanese society was affected by a mass hysteria called "Chernobyl syndrome" because any minor problems related to nuclear reactors hearkened back to the Chernobyl disaster (*The Nihon Keizai Shimbun*, 1988a). Although these narratives may not be directly linked to the newspapers risk assessment of nuclear power, they indicate how the papers perceived public concerns about nuclear risk. While the three newspapers reacted to the Chernobyl accident in more or less similar ways, they differed somewhat in their responses to public concerns following the disaster.

Overall, these media outlets never seriously reconsidered the nature of their risk assessment of nuclear danger following the major disaster. Whereas some European countries such as Austria and Sweden radically reexamined their nuclear energy policies after Chernobyl (Shibata & Tomokiyo, 1999), Japanese newspapers not only stressed the need to ensure nuclear safety but also uncritically embraced the AEC's assessment of Japan's nuclear safety, becoming more or less complacent about the country's circumstances. The findings support previous research about the relationship between Japanese mass media and the government, and indicate that the three newspapers did not serve as a strong check on the government's nuclear policy. However, the results of the present study suggest that the three newspapers differed in their treatment of public concerns about nuclear danger. While *The Asahi*, as a liberal daily newspaper, indicated the importance of listening to public concerns about nuclear risk in assessing nuclear power, both *The Yomiuri* and *The Nihon Keizai*, conservative and financial newspapers respectively, downplayed concerned citizens as being irrational "others" because they were concerned about risk.

Conclusion

By exploring the relationship between Japanese newspapers and Japan's energy policy, we can place the Fukushima nuclear accident within a historical context. This study discussed the relationship between Japanese national newspapers and Japan's nuclear energy policy within such a context, and showed that these papers promoted the country's nuclear energy policy throughout the postwar period. Drawing on the media package model, this article particularly examines Japanese newspaper editorials' risk assessment of nuclear power following the Chernobyl accident.

Three important findings emerged from the present study. First, a comparative analysis of the three newspapers' editorials showed that they all promoted nuclear power by emphasizing the need to ensure nuclear safety following the Chernobyl nuclear accident, and by articulating Japan's nuclear safety excellence. Even after the Chernobyl nuclear disaster, Japanese newspapers' risk assessment of nuclear power was predicated on the assumption that, given the country's full-scale preparations for a nuclear disaster, any danger could be reducible to close to zero, although they recognized the impossibility of

making the use of nuclear power absolutely safe. Seeking the safety of nuclear power plants alone, they did not critically consider the safety of nuclear power per se.

The second finding is that their risk assessment of nuclear power can be better understood in a historical context. As shown, their thematic statement of "Making more serious efforts" seemed to reflect Japanese society's complacency about nuclear technologies. Additionally, both *The Asahi* and *The Nihon Keizai* used historically loaded symbolic devices, including the names "Hiroshima and Nagasaki" and the expression "the peaceful use of nuclear technology," in their assessment of the risk of nuclear power following the Chernobyl accident. History, more specifically, *national history*, mattered in their risk assessment of nuclear power. On the other hand, *The Yomiuri*, a conservative newspaper that once linked Hiroshima and Nagasaki with the peaceful use of nuclear power in order to promote its use, did not invoke memories of "past" history, and, instead, emphasized the role that Japan should aspire to play in international society. By "historicizing" these loaded symbolic devices as things of the past, *The Yomiuri* tactically utilized new themes such as "environmental friendliness" in order to support nuclear power.

Finally, given the surge of public concern about nuclear power, the three newspapers differed in the ways in which they dealt with concerned citizens. As a liberal newspaper, *The Asahi* emphasized the need to promote dialogue between citizens and policymakers following the disaster. However, *The Yomiuri,* a conservative paper, focused on alleviating anxieties that concerned citizens had, whereas *The Nihon Keizai,* a financial paper, presented concerned citizens as irrational. The perspective of each of the three newspapers mattered in how they viewed anxious citizens.

After the Fukushima nuclear accident, networked antinuclear movements emerged in Japan and beyond. In its editorials from July 2011, *The Asahi* called for a departure from Japan's existing nuclear policy, whereas both *The Yomiuri* and *The Nihon Keizai* continued to promote the country's nuclear plans. Does history still matter in Japan's risk assessment of nuclear power following the Fukushima nuclear accident? What does a history of Chernobyl tell us about post-Fukushima Japanese mass media?

This article examined the editorials of only three newspapers. In order to capture Japanese mass media's risk assessment of nuclear power following the Chernobyl accident, it is necessary to analyze the whole content of Japanese newspapers as well as television networks. Also, this study worked with rather abstract and unitary models of "Japanese newspapers," and "the United States," giving the discussion a relatively reductive quality. However, the findings of this article indicate that, in hindsight, Japanese newspapers may not have fully drawn a lesson from the Chernobyl accident. Obviously, the cases of Fukushima and Chernobyl are radically different, but this study indicates a way in which communication scholars can get involved in the ongoing discussion of the Fukushima nuclear crisis.

References

Aldrich, D. P. (2008). *Site fights: Divisive facilities and civil society in Japan and the west*. Ithaca, NY: Cornell University Press.

Arima, T. (2006). *Nihon terebi to CIA: Hakkutsu sareta Shōriki fairu* [The Nippon television and the CIA: The discovered Shōriki file]. Tokyo, Japan: Shinchōsha.

Arima, T. (2008). *Genpatsu, Shōriki, CIA* [Nuclear power, Shōriki, and the CIA]. Tokyo, Japan: Shinchōsha.

The Asahi Shimbun. (1986a, May 1). Uchūsen chikyūgō deno genpatsu jiko [A nuclear disaster at Spaceship Earth]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1986b, June 20). Geshiro no kokusai anzenkijun o tsukure [Establish the international safety standards of nuclear reactors]. *The Asahi Shimbun*, p. 5.

The Asahi Shimbun. (1986c, November 3). Genshiryoku anzengijustu de kinrin kyōryoku o [Advancing nuclear safety cooperation with nearby Asian countries]. *The Asahi Shimbun*, p. 5.

The Asahi Shimbun. (1987a, June 24). Genshiryoku no kaihatsu wa kokusaiteki shiya de [With international perspectives on the development of nuclear power]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1987b, November 5). Shingenshiryoku kyōtei to nihon no shinyō [New nuclear agreement and Japan's credibility]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1987c, December 7). Genshiryoku no anzengijutu wo kiwameru michi [The way towards achieving nuclear safety]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1988a July 6). Jūmin no fuan o chokushi subekida [Need to face up to the residents' concerns]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1988b, August 14). "Mutsu" no ayamachi o kurikaesuna [Do not repeat the same mistake as "Mutsu"]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1988c, September 28). Genpatsu suishin ni kibishii seron [Strong public opinion against the promotion of nuclear power]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1988d, October 13). Genshiryoku anzeni wa kanshiyaku o tsuranuke [The Nuclear Safety Commission should remain a watchdog]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1988e, October 17). Purutoniumu no yume to yuutsu [The dreams of plutonium and its melancholy]. *The Asahi Shimbun*, p. 5.

The Asahi Shimbun. (1988f, November 1). Jumyou no kita genpatsu o dosuru [How should we deal with nuclear reactors that have exceeded their life span?]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1989a, April 30). Genshiryoku o dō ichizukeruka [How should we situate nuclear power?]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1989b, June 28). Genpatsu jiko shakudo de shinpai na koto [Anxieties about a nuclear accident]. *The Asahi Shimbun,* p. 5.

The Asahi Shimbun. (1989c, October 21). Genpatsu ni nezukuka "anzen bunka" [Can a "safety culture" take root in nuclear power?]. *The Asahi Shimbun*, p. 5.

Avenell, S. (2012). From fearsome pollution to Fukushima: Environmental activism and the nuclear blind spot in contemporary Japan. *Environmental History*, *17*(2), 244–276.

Feldman, O. (1993). *Politics and the news media in Japan*. Ann Arbor, MI: The University of Michigan Press.

Firmstone, J. (2003). Britain in the Euro?: British newspaper editorial coverage of the introduction of the Euro. *European Political Communication Working Paper Series, 5*(3). Retrieved from http://www.eurpolcom.eu/exhibits/paper5.pdf

Freeman, L. A. (2000). *Closing the shop: Information cartels and Japan's mass media*. Princeton, NJ: Princeton University Press.

Funabashi, H. (2012). Why the Fukushima nuclear disaster is a man-made calamity. *International Journal of Japanese Sociology, 21*, 65–75.

Gamson, W. A. (1988). Political discourse and collective action. In B. Klandermans, H. Kriesi, & S. Tarrow. (Eds.), *International social movements: From structure to action: Comparing social movement research across cultures* (pp. 397–415). Greenwich, CT: JAI Press.

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology, 95*(1), 1–37.

Genshiryoku Iinkai. (1986). *Showa 61 nendo ban genshiryoku hakusho* [Japan's white paper on nuclear power 1986]. Retrieved from http://www.aec.go.jp/jicst/NC/about/hakusho/wp1986/index.htm

Gitlin, T. (1980). *The whole world is watching*. Berkeley, CA: University of California Press.

Hall, I. P. (1998). *Cartels of the mind: Japan's intellectual closed shop*. New York: W.W. Norton.

Hasegawa, K. (2012). Facing nuclear risks: Lessons from the Fukushima nuclear disaster. *International Journal of Japanese Sociology*, *21*, 84–91.

Hein, L. E. (1990). *Fueling growth: The energy revolution and economic policy in postwar Japan*. Cambridge, MA: Harvard University Press.

Higuchi, T. (2012, September 4). Japan's culture: Culprit of the nuclear accident? *Bulletin of the Atomic Scientists*. Retrieved from http://www.thebulletin.org/web-edition/op-eds/japan%E2%80%99s-culture-culprit-of-the-nuclear-accident

Hosei Daigaku Ohara Shakai Mondai Kenkyujo. (1989). *Nihon rōdō nenkan,* 59 [The Labor yearbook of Japan 1989]. Retrieved from http://oohara.mt.tama.hosei.ac.jp/rn/59/rn1989-297.html

Ikawa, M. (2002). Genshiryoku heiwa riyō hakurankai to Shimbunsha [The Atoms for Peace exhibition and newspaper agencies]. In T. Tsuganezawa (Ed.), *Nihon no media ibento 1945–1960* [Japan's media event (1945–1960)] (pp. 247–265). Kyoto, Japan: Sekaishisōsha.

Inose, N. (1990). *Yokubō no media* [The media of desire]. Tokyo, Japan: Shōgakukan.

Itou, H. (2005). Genshiryoku kaihatsu/riyo o meguru media gidai: *Asahi Shimbun* shasetsu no bunseki (chū) [A media agenda regarding the development and use of nuclear energy: The analysis of the editorial of the *Asahi Shimbun* (2)]. *Pool Gakuin Daigaku Kenkyu Kiyo*, 111–126. Retrieved from http://ci.nii.ac.jp/els/40007268001.pdf?id=ART0007271078&type=pdf&lang=en&host=cinii&order_no=&ppv_type=0&lang_sw=&no=1356121174&cp=

Jōmaru, Y. (2012). *Genpatsu to media* [Nuclear power and media]. Tokyo, Japan: *Asahi Shimbun* Shuppan.

Kainuma, H. (2011). *Fukushima ron* [On Fukushima]. Tokyo, Japan: Seidosha.

Kitahara, T. (2011). Nihon no Shimbun wa "genshiryoku" o donoyouni tsutaetekitaka: *Asahi Shimbun* to *Yomiuri Shimbun* no shasetsu roncho no kosatsu (Dai I ki to dai niki) [How have the Japanese newspapers reported "atomic energy"?: Comparative studies of editorials of *The Asahi Shimbun* and *The Yomiuri Shimbun* (the 1st and 2nd period)]. *Shōbi Journal of Policy Studies, 13*, 35–53.

Kokkai Jikochō. (2012). *Kokkai jikochō: Tokyo denryoku Fukushima genshiryoku chōsa iinkai hōkokusho* [The official report of the Fukushima nuclear accident independent investigation commission]. Retrieved from http://naiic.go.jp/report/

Krauss, E. S. (2000). *Broadcasting politics in Japan: NHK and television news*. Ithaca, NY: Cornell University Press.

Kuznick, P. (2011, April 13). Japan's nuclear history in perspective: Eisenhower and atoms for war and peace. *Bulletin of the Atomic Scientists*. Retrieved from http://thebulletin.org/web-edition/features/japans-nuclear-history-perspective-eisenhower-and-atoms-war-and-peace

Lee, F. L. P., & Lin, A. M. Y. (2006). Newspaper editorial discourse and the politics of self-censorship in Hong Kong. *Discourse and Society, 17*, 331–358.

Levey, S. (1954, September 22). Nuclear reactor urged for Japan: T. E. Murray of A.E.C. tells steel union step is vital in atom race with Russia. *The New York Times*, p. 14.

Low, M., Nakayama, S., & Yoshioka, H. (1999). *Science, technology and society in contemporary Japan*. New York, NY: Cambridge University Press.

The Mainichi Shimbun. (2011, April 20). Tokushū waido "kokusaku minei" sengoshi no tsuke [Special edition: The privatized nuclear power system as the price of postwar Japanese history]. Retrieved from http://mainichi.jp/select/weathernews/news/20110420dde012040004000c.html

Matsuda, H. (1980). *Dokyumento hōsō sengoshi I: Shirarezaru sono kiseki* [The postwar history of broadcasting part I: Its unknown tracings]. Kanagawa, Japan: Soshisha.

Matsuda, H. (1981). *Dokyumento hōsō sengoshi II: Sosa to janarizumu* [The postwar history of broadcasting part II: Manipulation and journalism]. Kanagawa, Japan: Soshisha.

Nanasawa, K. (2008). Genshiryoku 50 nen: Terebi wa nani o tsutaete kitaka. Archive o riyō shita naiyō bunseki [What did television convey about nuclear power for the past fifty years?: The content analysis of the NHK archive]. *NHK Hōsō Bunka Kenkyujo Nenpō, 52*, 251–331. Retrieved from http://www.nhk.or.jp/bunken/research/title/year/2008/pdf/007.pdf

Nihon Saiken Initiative. (2012). *Fukushima genpatsu jiko dokuritsu kenshō iinnkai: Chosa/kenshō hōkokusho* [Independent investigation commission on Fukushima Daiichi nuclear accident: Investigation report]. Tokyo, Japan: Discover 21.

The Nihon Keizai Shimbun. (1986a, May 1). Shijō saiaku no genpatsu jiko to Soren no sekinin [The worst nuclear accident on record and the Soviets' responsibility]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1986b, May 20). Genshiryoku anzen kantetsu no kihon shisei kyōka o [Let's fortify the basic stance to ensure nuclear safety]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1986c, September 1). Genshiryoku saigai no yobōtaisei o [To take preventive measures against nuclear disasters]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1986d, November 2). Nihon no genshiryoku no atarashii kokusaiteki sekinin [A new international responsibility that Japan's nuclear power assumes]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1986e, December 26). Cherunobuiri no kyōkun [Lessons from Chernobyl]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1987a, April 26). "Anzen yūsen" no shin genshiryoku chōki keikaku o [To make a "safety-first" new long-term plan on nuclear power]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1987b, June 23). "Anzen sengen" dashita genshiryoku chōkikeikaku [Long-term plan on nuclear power statement: Nuclear power is safe]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1988a, February 10). Tarinu seifu no genpatsu setumei [The government's lack of an explanation about nuclear policy]. *The Nihon Keizai Shimbun,* p. 2.

The Nihon Keizai Shimbun. (1988b, August 9). Kankyō hozen to ryōritsu no enerugī seisaku o [Formulate an energy policy compatible with environmental preservation]. *The Nihon Keizai Shimbun,* p. 2.

The Nihon Keizai Shimbun. (1988c, October 13). Hōshasei haikibutsu o kangaeru [Thinking about radioactive waste]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shibun. (1988d, November 13). Genpatsu mondai de seifu gikai wa nani o suru [What are the government and parliament doing about nuclear issues?]. *The Nihon Keizai Shimbun,* p. 2.

The Nihon Keizai Shimbun. (1988e, December 3). Genshiryoku no kokusai chekku o [International monitoring of nuclear power is necessary]. *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1989a, July 2). Ima genpatsu ronsō ni motomerareteiru mono [Things that are needed concerning the controversies over nuclear power]. *The Nihon Keizai Shimbun,* p. 2.

The Nihon Keizai Shimbun. (1989b, November 18). Genpatsu no anzen niwa sekaikanshi shisutemu o [Need to introduce a world monitoring system for nuclear safety] *The Nihon Keizai Shimbun*, p. 2.

The Nihon Keizai Shimbun. (1989c, December 12). Kakunen tōketsuron no imi wa nanika. [The meaning of theories for a moratorium on nuclear fuel programs]. *The Nihon Keizai Shimbun,* p. 2.

The Nihon Keizai Shimbun. (1990, April 9). Ajia genpatsu o hōchi suruna [Don't leave Asia's nuclear power]. *The Nihon Keizai Shimbun,* p. 2.

Norwood, W. D. (1971). Fact and fiction about health and atomic power plants. *Journal of Occupational Medicine*, *13*(4), 199–204.

Ogawa, A. (2013). Young precariat at the forefront: Antinuclear rallies in post-Fukushima Japan. *Inter-Asia Cultural Studies, 14*(2), 317–326.

Ōishi, M. (2011). *The day the sun rose in the west: Bikini, the lucky dragon, and I*. Honolulu, HI: University of Hawai'i Press.

Osgood, K. (2006). *Total cold war: Eisenhower's secret propaganda battle at home and abroad*. Lawrence, KS: University Press of Kansas.

Oyama, N. (1999). Genshiryoku hōdo ni miru media frame no hensen [Changing media frames on nuclear power]. *Proceedings of the Faculty of Letters of Tokai University, 72*, 41–60.

Perrow. C. (2011, April 1). Fukushima, risk, and probability: Expect the unexpected. *Bulletin of the Atomic Scientists*. Retrieved from http://thebulletin.org/web-edition/features/fukushima-risk-and-probability-expect-the-unexpected

Pharr, S., & Krauss, E. S. (Eds.). (1996). *Media and politics in Japan*. Honolulu, HI: University of Hawai'i Press.

Pickett, S. E. (2002). Japan's nuclear energy policy: From firm commitment to difficult dilemma addressing growing stocks of plutonium, program delays, domestic opposition and international pressure. *Energy Policy, 30*, 1337–1355.

Sano, S. (1994). *Kyokaiden* [The biography of a monster]. Tokyo, Japan: Bungeishunju.

Sasaki, T. (1999). *Nihon no kindai 14: Media to kenryoku* [The modernity of Japan vol. 14: Media and power]. Tokyo, Japan: Chuokoron Shinsha.

Shibata, T., & Tomokiyo, H. (1999). *Genpatsu kokumin seron* [Public opinion on nuclear power]. Tokyo, Japan: ERC Shuppan.

Shigen enerugī chō. (2012). *Enerugī hakusho* [Japan's white paper on energy]. Retrieved from http://www.enecho.meti.go.jp/topics/hakusho/2012energyhtml/2-1-4.html

Shimura, K. (2011). *Toden teikoku: Sono shippai no honshitsu* [The TEPCO empire: The nature of its failure]. Tokyo, Japan: Bungeishunju.

Suzuki, T. (1983). *Denryoku sangyō no atarashii chōsen* [A new challenge for energy industries]. Tokyo, Japan: Nihon Kōgyō Shimbunsha.

Tabusa, K. (1992). *Nuclear politics: Exploring the nexus between citizens' movements and public policy in Japan* (Unpublished doctoral dissertation). Columbia University, New York.

Takekawa, S. (2012). Drawing a line between peaceful and military uses of nuclear power: The Japanese press, 1945–1955. *The Asia-Pacific Journal: Japan Focus*, *10*(37), number 2. Retrieved from http://www.japanfocus.org/-Shunichi-TAKEKAWA/3823

Tanaka, T., & Kuznick, P. (2011). *Genpatsu to Hiroshima: "Genshiryoku heiwa riyo" no shinsō*. [Nuclear power and Hiroshima: The truth of the peaceful use of nuclear power]. Tokyo, Japan: Iwanami Shoten.

Tanaka, Y., & Kuznick, P. (2011). Japan, the atomic bomb, and the "peaceful use of nuclear power." Retrieved from http://japanfocus.org/-Yuki-TANAKA/3521

Upham, F. (1987). *Law and social change in postwar Japan*. Cambridge, MA: Harvard University Press.

Van Wolfren, K. (1989). *The enigma of Japanese power: People and politics in a stateless nation*. London, UK: Macmillan.

Watanabe, T., & Nohara, H. (2000). Shiryō kara yomitoku nihon no media to shakai kenryoku (dainibu): Terebi hōsō to keizaiseichōkokka nihon no poritikaru economi. [A study of the enactment and amendments of the Japanese broadcasting law, Part 2: Political economy of Japanese TV broadcasting and economic development]. *Hyōron shakaikagaku*, *63*, 49–235.

Williamson, P. (2012). Largest demonstrations in half a century protest the restart of Japanese nuclear power plants. *The Asia-Pacific Journal: Japan Focus*, *10*(27, 5), Retrieved from http://www.japanfocus.org/-Piers-_Williamson/3787

The Yomiuri Shimbun. (1954, January 26). Tsuini taiyo wo toraeta 22: Hiroshima ni jinrui hatsu no genbaku [We finally caught the sun (No. 22): The first atomic bomb in human history hit Hiroshima]. *The Yomiuri Shimbun*, p. 7.

The Yomiuri Shimbun. (1986a, May 14). Soren seifu no genpatsujiko e no taio [The Soviet government's response to the nuclear accident]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1986b, May 26). Soren genpatsujiko kara nani o manabuka [What can we learn from the Soviets' nuclear accident?]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1986c, August 21). Soren genpatsujiko o "tazan no ishi" ni [Let's draw a lesson from the Soviets' nuclear accident]. *TheYomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1986d, August 31). Genpatsu no shinrai o kaifuku suru tameni [To regain the trust of nuclear power]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1986e, November 6). Sekai ni kōken suru genshiryoku kaihatsu o [To pursue the development of nuclear power that contributes to the world]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1986f, December 29). Kagaku gijutsu no junan no toshi data [The year when scientific technologies suffered from accidents]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1987a, April 20). Soren jiko kara ichinen no genshiryoku [One year after the Soviets' accident]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1987b, June 25). Kokusai kankaku tarinai genshiryoku keikaku [Japan's nuclear policy with a limited international perspective]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1987c, October 22). Genshiryoku no fuan kaishō ha jūbunka [Would it be enough to alleviate social anxieties about nuclear power?] *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1988a, February 15). Genpatsu unten ga naze fuan o maneku noka [Why do nuclear power operations cause anxiety?]. *The Yomiuri Shimbun*, p. 3.

The Yomiuri Shimbun. (1988b, June 11). "Genpatsu fuan" ni tekisetu na taiō o [Coping with concerns about nuclear plants properly]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1988c, October 14). Genshiryoku anzen iinkai e no kitai [Expectations for the AEC]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1989a, March 14). Genshiryoku hatsuden no shinrai o uragiruna [Don't go against people's expectations about nuclear power]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1989b, June 9). Kariforunia shū no genpatsu to heisa to chikyū kankyō [The shutdown of California's nuclear reactor and the earth's environment]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1989c, July 21). Genpatsu bōsai o saikō saseru hanketsu. [The judicial decision that allows for the reconsideration of nuclear disaster prevention]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1989d, October 27). 20 nengo no enerugī o kangaeru [Thinking about energy 20 years later]. *The Yomiuri Shimbun,* p. 3.

The Yomiuri Shimbun. (1990, January 1). Shinsekai chitsujo to nihon no shimei [The new world order and Japan's mission]. *The Yomiuri Shimbun,* p. 3.

Yoshioka, H. (2011). *Genshiryoku no shakaishi: Sono nihon teki tenkai*. [Social history of nuclear power in Japan]. Tokyo, Japan: Asahi Shimbunsha.

Yoshimi, S. (2012a). Radioactive rain and the American umbrella. *The Journal of Asian Studies*, *71*, 319–331.

Yoshimi, S. (2012b). *Yume no genshiryoku: Atoms for dream* [Atoms for dream]. Tokyo, Japan: *Chikuma Shobō*.

Zwigenberg, R. (2012). "The coming of a second sun": The 1956 Atoms for Peace exhibit in Hiroshima and Japan's embrace of nuclear power. *The Asia-Pacific Journal: Japan Focus*, *10*(1, 6). Retrieved from http://www.japanfocus.org/-Ran-Zwigenberg/3685