

Research Note

Identifying the “Fukushima Effect”: Assessing Japanese Mass Media Coverage of International Nuclear Power Decisions

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In the aftermath of the nuclear crisis involving the Fukushima Dai'ichi nuclear power plant on March 11, 2011, nuclear power generation in Japan and other countries has come under close public scrutiny. Immediately following the nuclear crisis, countries such as Switzerland and Germany that have relied historically on nuclear power utilization started to seriously reconsider safety measures surrounding nuclear power generation. Such considerations led to the June 2011 decision in the German Bundestag that went into force on August 6, 2011.

In the process of determining its own domestic nuclear energy policy, assessments and evaluations of other countries' responses in the aftermath of “3.11” have appeared frequently in Japan's domestic mass media. Yet have the nuclear energy policies in certain other countries such as Germany been singled out for comparison with Japan's own energy strategies and priorities? Furthermore, has such coverage tended to focus on the positive or negative aspects of nuclear energy?

In this paper, we assess the characteristics of Japanese mass media coverage of public opinion concerning nuclear energy policy in other countries. From a methodological perspective, our research draws on a combination of content analysis and sentiment analysis and investigates how the German case appeared in news articles concerning nuclear power in Japan in the six-months period from March 11 to September 11, 2011, identifies the main political actors involved, and assesses if the coverage was positive or negative.

Keywords: Nuclear energy policy, Content analysis, International policy comparisons, Japanese journalism, Grounded theory, Framing theory, Narrative theory

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Introduction

In the aftermath of the nuclear crisis involving the Fukushima Dai'ichi nuclear power plant on March 11, 2011, nuclear power generation in Japan and other countries has come under close public scrutiny. Immediately

following the nuclear crisis, countries such as Switzerland and Germany that have relied historically on nuclear power utilization started to seriously reconsider safety measures surrounding nuclear power generation. Such considerations led to the June 2011 decision in the German *Bundestag* that went into force on August 6, 2011. Germany is internationally known to be at the forefront in tackling environment and energy policy issues on a national scale under wide political and social consensus.

Germany's coalition government of the Social Democratic Party (SPD) and the Green Party (*Bündnis 90/Die Grünen*) between 1998 and 2009 already pursued nuclear phase-out and formulated its legislative framework into their political agenda. Only a few months before the Great East Japan Earthquake, which damaged the nuclear reactor of the Fukushima Dai'ichi power plant run by the Tokyo Electric Power Company (TEPCO) and caused the most serious nuclear disaster since the Chernobyl accident in 1986, the new government coalition formed after the 2009 general elections of the Christian/Social-Democratic Union Party (CDU/CSU) and Free-Liberal Party (FDP) postponed nuclear phase-out under major pressure from nuclear-energy-generating electricity companies in Germany. But the crisis involving the nuclear power plant on March 11, 2011 immediately spurred the reintroduction of a nuclear phase-out platform which was eventually labeled as the "phase-out of the phase-out" (Schreurs, 2012).

In the process of determining its own domestic nuclear energy policy, assessments and evaluations of other countries' responses in the aftermath of "3.11"¹ have appeared frequently in Japan's domestic mass media. Yet have the nuclear energy policies in other countries been singled out for comparison with Japan's own energy strategies and priorities? Furthermore, has such coverage tended to focus on the positive or negative aspects of nuclear energy? Arlt and Wolling (2015: 3) have identified the "Fukushima Effect," using this phrase to describe "international findings on attitude changes towards nuclear power as a result of the Fukushima accident." However, their results show only a moderate impact of this incident in terms of attitudes towards nuclear energy based on an analysis of German mass media coverage and survey data. In consideration of Germany's reaction on a wide political scale, we assess the characteristics of Japanese mass media coverage of public opinion concerning nuclear energy policy in Germany. We are specifically interested in assessing how Germany's sudden energy shift as a reaction to the Fukushima incident was perceived through four major Japanese newspapers (the *Asahi*, the *Mainichi*, the *Nikkei*, and the *Yomiuri*). From a methodological perspective, our research draws on a combination of content analysis and sentiment analysis, and investigates the discourse involving Germany, drawing on news articles concerning nuclear power in Japan in the six-months period from March 11 to September 11, 2011, identifies the main policy actors involved, and assesses if the coverage was positive or negative.

The first section provides an overview of Japan's legal framework regarding nuclear energy policy and the historical background of nuclear energy in Japan, followed by a review of the literature covering the aspects of nuclear energy determinants in Japan and characteristics of the Fukushima news coverage. Then, we discuss briefly the theoretical framework and methodology that we draw on to explain our results. As our research involves qualitative content analysis, framing theory, with its focus on analyzing in-depth issues or events, serves our aim to combine content analysis and sentiment analysis of text data. We combine this theoretical approach with constructivist grounded theory to reveal crucial issues in the research questions by coding the data interactively instead of using predetermined parameters. We suggest that this combination of framing as a traditional approach and grounded theory with a new approach in computer-assisted text analysis can allow us to uncover new patterns in investigating news coverage and provides a potential solution to the critical role the researcher takes within his/her own research in grounded theory. In section five, we discuss our main results,

¹ The phrase "3.11" (pronounced "three-eleven") is frequently used by the Japanese people to refer to the triple disasters that occurred on March 11, 2011 involving the Great East Japan Earthquake, the resulting tsunami, and the nuclear accident at the Fukushima Dai'ichi nuclear power plant.

wherein we examine the articles in each newspaper individually, and close with a brief comparison of the characteristics in the news coverage of the German case in the four newspapers, where we summarize our main findings and evaluate our methodology for further research.

1. Nuclear energy discourses in Germany and Japan

Since the 1960s, anti-nuclear energy issues have been part of the political agenda in Germany. The establishment of the Green Party (*Bündnis 90/Die Grünen*) in 1980 and its election to the German *Bundestag* in 1983 defined the path for strong environmental/anti-nuclear energy policy discourse. Different than in Japan where the Ministry of Economy, Trade and Industry (METI) is in charge of nuclear-energy regulations, Germany’s nuclear-energy policy is regulated by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB), established in 1986 (Schreurs 2002). The red-green coalition between the Social Democratic Party (SPD) and the Union 90/The Greens (*Bündnis 90/Die Grünen*) under former chancellor Gerhard Schröder (SPD) between 1998 and 2005 set the foundation for nuclear phase-out. With the 13th change of the Atomic Act (January 1, 1960) on July 31, 2011, as a direct response to the Fukushima accident, the governmental coalition of the CDU/CSU and the FDP returned to a policy of phasing out nuclear energy by 2022. Even though the effect on domestic energy policy decisions after Fukushima eventually led to consensus between the ruling and the opposition parties, the Chernobyl catastrophe in 1986 in the Ukraine, a close neighbor, had a lasting influence on Germany’s anti-nuclear policy path. This background of political attention to nuclear issues made the characteristic reaction on the Fukushima disaster on public and policy discourses in Germany possible (Seiffert & Fährnich 2014).

The origins of Japan’s anti-nuclear movement dates back to the 1950s. The first incident involved the *Lucky Dragon No. 5* (*Daigo fukuryū maru*), wherein a Japanese fishing boat was exposed to and contaminated by nuclear fallout from the U.S. Army’s hydrogen bomb testing in March 1954. This incident was the initial catalyst for future anti-nuclear movements in Japan. During the 1970s and 1980s, other incidents occurred such as the Mutsu radiation leak accident in 1974, which drew limited attention to the nuclear power debate. From the late 1970s and into the early 1980s, as a result of political and social factors, administrative reforms related to nuclear energy were carried out, and the building of new nuclear power plants was not permitted during this period (Honda, 2005).

However, anti-nuclear social movements faced a difficult situation after the 1980s. Labor unions that had supported these movements were shrinking as a result of reorganization of the labor market. The Cold War ended and the prestige of Marxism was gradually decreasing. As a result of these global and political changes, social movements gradually lost material resources and ideological status. In the summer of 1994, the Social Democratic Party of Japan (SDP) changed its nuclear energy strategy and accepted the use of nuclear power plants in order to join the coalition government with the Liberal Democratic Party of Japan (LDP) and the New Party Sakigake. At the same time, information regarding many nuclear accidents and scandals surfaced, and social movements were activated especially at the local level. Isolated nuclear incidents continued to occur, for example, the Tokaimura nuclear accident at a JCO² plant in September 1999, which was estimated to have reached “level four” on the International Nuclear Event Scale (INES) (Kawana, 2013: 276). In response, the Act on Special Measures Concerning Nuclear Emergency Preparedness was enacted in the same year.

After the Fukushima accident in March 2011, Japan’s nuclear energy policies entered a complicated phase, however it seems that the disaster did not engender fundamental policy changes. In September 2012, Noda

² Formerly the Japan Nuclear Fuel Conversion Co., which is now defunct. Source: World Nuclear Association (2013) *Tokaimura Criticality Accident 1999* (<http://www.world-nuclear.org/info/Safety-and-Security/Safety-of-Plants/Tokaimura-Criticality-Accident/>) (Access date: September 20, 2015).

Yoshihiko, a DPJ (Democratic Party of Japan) politician and the former prime minister from September 2011 to December 2012, devised new energy and environmental strategies that included halting the operation of all nuclear power plants by the 2030s. Also, new regulatory standards were formulated in 2013, and nuclear safety regulations were strengthened substantially (Yamaguchi, 2013: 1, 8-9). However, Noda decided to restart the nuclear power plants which were sitting idly after the Fukushima Disaster in order to meet energy demand, and the Ōi nuclear power plant located in Fukui prefecture was restarted in July 2012. Also, the Sendai nuclear power plant located in Kagoshima prefecture was restarted in August 2015, based on a decision made by prime minister Abe Shinzo.

Japan and Germany have been part of international environmental and anti-nuclear movements since the early post-war era and political responses towards environmental issues have prominently figured in news coverage. Even though Japan experienced nuclear accidents prior to Fukushima, even afterwards, anti-nuclear movements have struggled to encourage public discourse which could influence political decisions. Yet strong ties between the LDP-led government and economic ministries with industry contacts have dominated the discourse (Hartwig et al. 2014). In contrast, the energy industry in Germany has been active in promoting renewable/clean energies and favors nuclear phase-out, which, in turn, has been reflected in environmental/anti-nuclear public opinion in the mass media.

2. Literature Review

(1) Determinants of Japan's nuclear policies

There are numerous studies that focus on both domestic and international factors that determine nuclear policy in Japan. First, we focus on studies that point to domestic factors. Honda Hiroshi (2005, 2014) analyzed the political process of Japan's nuclear energy policy from the perspective of social movement theory. More specifically, he focused on not only the dominant political actors such as the bureaucracy, the ruling party and industrial associations, but also opposition parties, civic movements, labor unions and local governments that potentially have opportunities to change nuclear policy. The major results from his studies have been that (a) opposition parties and labor unions that have supported movements were split in half and this led to weakening the anti-nuclear movements by the 1980s; (b) pro-nuclear political actors that were supported by economic groups seized power after 1990s; and (c) many nuclear accidents garnered publicity and social movements were activated especially at the local level (Honda, 2005). The Fukushima Dai'ichi incident promoted reactivation of pro-nuclear groups as well as anti-nuclear groups (Honda, 2014). The restart of the Ōi and Sendai nuclear power plants suggests that Japan's nuclear policies have been determined by the attitudes of political elites³.

On the other hand, there is also the question as to whether international factors, for example, the international system or international policy changes, have played a role in determining Japan's nuclear policies. Shibata and Tomokiyo (1999) argued that Japan's public opinion has tended to be more cautious about nuclear energy after major nuclear accidents such as the 1979 Three Mile Island accident and the 1986 Chernobyl disaster⁴. Sagara (2009) suggested that international policy changes and discussions have some impact on Japan's political decision-making regarding nuclear energy. Suzuki (2014) focused on import and export policies of nuclear technology and analyzed historical changes in the international system that promote the use of nuclear energy. As a result of her analysis, she claimed that there has been a major impact in decision-making processes by the U.S. government and its nuclear power industries, but the impact of the Soviet Union under the

³ At the same time, we cannot argue that Japan's anti-nuclear movements have been necessarily weak. As Honda Hiroshi noted, anti-nuclear movements have some impact especially at the local level (2005, 2014).

⁴ At the same time, when we focus on the policy level, the Chernobyl disaster has not lead to fundamental political change to Japan's nuclear policies (Wakao & Honda, 2012, Introduction).

Cold War and China in the 21st century cannot be ignored as well. After the Fukushima Dai’ichi incident, there have been numerous publications that focus on nuclear and energy policy or energy security strategies in various countries from both pro-nuclear and anti-nuclear groups (Kawaguchi-Mahn, 2013; Kawaguchi, 2015). International factors are frequently specified through international organizations, treaties or international accidents, and may have had some impact on Japan’s decision-making regarding nuclear policy.

(2) Characteristics of news coverage of 3.11 in Japan and Germany

Numerous studies about media, communication and journalism have pointed to the vital role that the mass media plays in shaping political discourse and public opinion in modern democratic countries such as Germany and Japan. Whereas the media landscape in Japan is considered to have a characteristically high influence on determining public opinion and political discourse (Takeshita & Takeuchi 1996), studies analyzing characteristics of Japanese and German mass media in the aftermath of the Fukushima incident provide a solid basis for our research. To address the question whether the effect of Fukushima on international energy and nuclear policy shows evidence of pressure through a reverse effect in changing its own domestic nuclear energy policies, it is necessary to summarize the most important findings about Fukushima news coverage in Japan and Germany.

Considering Germany to be a special case in regards to its domestic responses to Fukushima in terms of changing its nuclear-policy decisions, how did the German media report about Fukushima? In comparison to the Chernobyl news coverage, using a quantitative historical approach, Nienierza (2014) found that the general frames of both events in German news coverage are almost the same, yet a positive frame of nuclear energy existed after Chernobyl, whereas after Fukushima, no positive frame could be found. Wolling and Arlt (2014) explained that because the accident in 1986 happened in a technologically less-developed country, the effect of Fukushima was much more drastic, as Japan is a technologically advanced country and known for its safety measures. Similar to Nienierza, Seiffert and Fähnrich (2014) identified the same anti-nuclear energy frame after Chernobyl and Fukushima, and argued that the pre-existence of that negative frame was responsible in part for the “Fukushima effect,” using a qualitative approach in analyzing German newspaper.

Hayashi (2013) showed that while Germany’s main television broadcasts featured extensive news coverage about the Fukushima disaster, its emphasis was on Japan’s political and social responses along with the effects on Germany itself. Moreover, about 40% of the Fukushima disaster news coverage was strongly connected to Germany’s domestic political responses, which focused on opposition party and governmental opinion from the beginning, increasing from comprising approximately one-third to more than half of the main texts of major news broadcasts, suggesting that the Fukushima incident was being closely tied to domestic politics in Germany. Judging from those findings, Germany appears to be an anti-nuclear dominated society and its anti-nuclear political stance affects public opinion. Arlt and Wolling (2015: 3) identified the “Fukushima Effect,” using this phrase to describe “international findings on attitude changes towards nuclear power as a result of the Fukushima accident” focusing on political and social responses, yet showed only a moderate impact of Fukushima in terms of attitudes towards nuclear energy based on an analysis of German mass media coverage in combination with survey data.

Drawing from quantitative and qualitative content analyses as a common tool for media studies, Abe (2015) identified the general debate over nuclear energy after Fukushima in Japan as filling the void between simple anti- or pro-nuclear energy debates with more nuanced content by identifying in-depth debates about nuclear energy in newspaper editorials. Whereas the *Asahi* and *Mainichi* advocated denuclearization appealing to democratic values and criticizing undemocratic administration of nuclear energy, the *Sankei* and *Yomiuri* opposed it with technological nationalistic values arguing Japan needs nuclear energy to keep its economic-technological leading position in the international society. Abe identified that news attention in the context of nuclear energy in the aftermath of 3.11 in the *Yomiuri*, for example, focused on technological-nationalistic

attitudes against nuclear phase-out, arguing that Japan's advanced technology was vital to ensure the safety of international nuclear management (Abe 2015: 100). In news items about the weekly anti-nuclear movements in front of the Prime Minister's residence in 2012, and movements against restarting the Ōi and Sendai nuclear power plants, by using anti-nuclear keywords (*datsugenpatsu* or *hangenpatsu*), Yoshino (2013: 97) identified major differences between the *Asahi*, which covered five to ten times more news articles in a short one-month period, and the *Yomiuri*, which appeared to take a stance closer to that of the cabinet office and the ruling party DPJ in covering these issues.

While studies are focused around the implications of analyzing how the mass media in each country reacted in their respective social contexts through international comparison, there is a research gap in studies analyzing international news in Japan concerning Germany's energy policy shift after Fukushima. Our analysis shows that the news coverage about Germany's anti-nuclear energy policy in Japanese mass media reflects these general findings, but reveals certain characteristics.

3. Framing the narrative of the Fukushima effect

While catastrophic events such as earthquakes and tsunamis are not constructed, the extent to which the nuclear accident was man-made is not addressed here; rather, in order to understand how a natural disaster affecting societies is narratively constructed and framed in a media context to make it perceivable and how this influences society and politics, is a crucial aspect that needs to be addressed.

Nisbert and Newman (2015) define frames as "interpretive storylines" and suggest that defining themes influences the amount of attention an issue receives. Members of the public rely on frames to make sense of complex issues, and frames found in media coverage influence public opinion as they rely on what they refer to as mental models about a certain issue, which in turn define what frames people look at when reading through newspapers. Identification of frames by news covering nuclear energy policies and the reaction of nuclear-energy-generating countries is crucial when trying to find evidence whether nuclear energy policy decisions of other countries in the aftermath of Fukushima could shape Japan's public opinion on nuclear energy and eventually channel international pressure towards political decision-making processes.

Nuclear energy, environmental and climate issues are image-loaded topics and the meaning of such catastrophic events is constructed by societies and the "process of assigning meaning to an event essentially requires the discursive 'work' of claims-makers" (Hansen 2010). As natural disasters, earthquakes and tsunamis cannot be controlled thus cannot be avoided, but it is possible that nuclear power and energy policy can be determined to mitigate the effects of natural disasters in the future.

Based on Hansen (2010), considering the "constructed" nature of public communication we find in mass media, framing and narrative theory provides fundamentals to analyze and understand why certain issues are being recognized over others (2010: 34). Social problems are always subjective and become recognized as such only through communication which constructs them as being a problem for public and political concern (2010: 14). Analyzing the characteristics of information coverage by mass media over a specific issue and finding differences between newspapers, can be analyzed while drawing from the narrative theory approach, where the information regarding social relevant issues are put together into a frame according to framing theory and build a narrative (story) intended for a certain audience. As each newspaper has its main readership, the predefined opinion, in other words mental model as explained by Nisbert and Newman (2015), people have about a public issue, influence their choice which information provided by different newspaper to follow.

After the Fukushima incident, Germany turned back to its recently abolished anti-nuclear energy policy. In the following section we investigate how the influence of this event on Germany's cause of action appeared in Japanese mass media and whether Germany's political changes show the potential to influence Japan's decision making regarding its nuclear energy policy, an effect we would label the "reverse Fukushima Effect".

4. Utilizing a mixed methods approach to analyze news coverage of German nuclear energy policy in Japanese mass media in the aftermath of 3.11

(1) Sampling the text data

Since the environmental movements of the 1960s, mass media has become a crucial actor in influencing political decision-making processes in environment-related topics based on how the environment and environment-related issues are presented to and perceived by the public (Hansen, 2010). Mass media can be considered as a central channel through which information about other countries reach society and, in the context of this research, whether the “Fukushima Effect” eventually had a reverse impact. In this paper, we assess how Germany’s sudden shift in its energy policy to become nuclear free by 2022 as a reaction to the Fukushima incident was perceived through four major Japanese newspapers: The *Asahi* (circulation of 6.8 million for the morning edition and 2.2 million for the evening edition) and *Mainichi* (circulation of 3.2 million for the morning edition and 939,000 for the evening edition), known to take an anti-nuclear energy/pro-nuclearization stand, and the *Nikkei* (circulation of 2.7 million for the morning edition and 1.4 million for the evening edition) and *Yomiuri* (circulation of 9.1 million for the morning edition and 2.9 million for the evening edition)⁵, known to be in favor of upholding nuclear energy technologies in order to ensure Japan’s international leading economic-technological role (cf. e.g. Abe 2015, Yoshino 2013). From a methodological perspective, our research draws on a combination of content analysis and sentiment analysis, and investigates on the one hand how often news articles concerning nuclear power in Japan referred to the German case in the six-months period from March 11 to September 11, 2011, and, on the other hand, identifies the main policy actors involved and assesses if the coverage was positive or negative.

As preparation for the content analysis, we investigated the databases of the four newspapers with a set of keywords consisting of “nuclear energy” (*genshiryoku*) and “political measures” (*seisaku*) together with country names based on the list of nuclear energy generating countries provided by the World Nuclear Association⁶ to get an overview how international nuclear energy policies appear in Japanese mass media. Our main interest was to investigate how Germany’s energy policy in the aftermath of 3.11 was perceived through Japanese mass media, and thus, we narrowed our results down and focused our attention for the content analysis on articles where Germany was mentioned. We chose the time period of March 11 to September 11, 2011 as it covers the immediate aftermath of the Fukushima Dai’ichi nuclear plant accident as well as the time frame leading up to the June 2011 legislation to phase-out nuclear power in Germany.

(2) Qualitative analysis of text data

Methodological advice from Charmaz’s (2012) *Constructing Grounded Theory*, drawing from methods based on the grounded theory approach of constructivists on how to analyze a great amount of text data, provides us with a heuristically appropriate tool to handle our sampled data in a short period of time. It is important to note that we are not building on a theoretical construct and applying it to the data. Rather, we draw from communication studies’ framing and narrative theory to explain the results from our coded data, which will be explained in the following section.

Coding text data in fragments, certain words, lines or segments, to identify the sentiment laying in news coverage of the “Fukushima Effect” on an international scale allows us to focus our attention on certain issues emerging from the data, identifying the frame and narrative constructed by the newspaper and providing us with the possibilities of raising analytical questions. Furthermore, we also considered the possibility of finding

⁵ Reference for newspaper circulation numbers: <http://www.kokusyo.jp/wp-content/uploads/2015/10/MDK151006b.pdf> (access date: 2015/11/30)

⁶ <http://www.world-nuclear.org/info/Facts-and-Figures/Nuclear-generation-by-country/> (access date: 2015/09/17)

evidence of international pressure (*gaiatsu*), which we later call the “reverse Fukushima Effect” channeled through mass media. The critically assessed subjectivity regarding this method and the problems of assumption-generation on text-data in order to identify latent traits and evaluate their “usefulness” in measuring their “real quantities”, our method is validated through the findings by Lowe and Benoit (2013), who validated human judgment as a benchmark for qualitative content analysis of political text-data, in terms of “semantic validity” and that the quantity being scaled from qualitative and sentiment text analyses reflects the quantity that was intended to be measured. While using tools within the analytical program NVivo 10, designed for qualitative research, we performed a sentiment analysis through an attribute value matrix query based on our coded content. For this, it was necessary to define attribute values to the data. These attribute values basically consist of elements of a coding sheet for newspaper content analysis.

5. Results: Evidence of a “reverse Fukushima Effect”?

(1) General findings

Table 1 shows the results of performing newspaper article database searches using the methodology described in the previous section. In terms of the number of articles overall, three out of the four newspapers published over 1,000 articles each during the six-months time period that was reviewed. Among the three, the figures for the *Asahi* and the *Yomiuri* newspapers are the highest. In all four newspapers, the percentage of articles covering Germany in the context of nuclear energy policy was less than 10%, with the *Asahi* having the highest percentage of 8.3% (n=1124) and the *Yomiuri* having the lowest percentage of 4.6% (n=1116), while the *Yomiuri* has the fewest number of articles (n=941) followed by the *Nikkei* (n=1005). Among all four newspapers, there were few articles that focused on Germany in the context of nuclear energy policy. The next four sections describe the article contents, which focused on nuclear energy policy in Germany in more detail for each of the four newspapers. Considering the prescribed standpoints towards nuclear energy for these major newspapers, the leading role of the *Asahi* in comparison with the *Yomiuri* at the bottom, represents the general findings of previous studies. The analysis will show, that the nuclear energy technology favoring *Nikkei* with a higher rate of 7.3% (n=73) in comparison with the pro-denuclearization favoring *Mainichi* with a rate of 4.9% (n=46), draws from the institutionalized anti-nuclear policy of the Green Party in Germany negatively to promote its pro-nuclear energy technology path for Japan, what affirms Abe’s findings (2014) about the *Nikkei* to promote positive aspects of nuclear energy for the wealth and stability of Japan.

Table 1 Number of articles in the context of nuclear energy policy and Germany between March 11 and September 11, 2011

Newspaper	Articles covering nuclear energy policy (N)	Articles covering Germany in the context of nuclear energy policy (N, %)	Articles with Germany as main theme in the context of nuclear energy policy (N, %)
<i>Asahi</i>	1124	93 (8.3%)	22 (2.0%)
<i>Mainichi</i>	941	46 (4.9%)	7 (0.7%)
<i>Nikkei</i>	1005	73 (7.3%)	18 (1.8%)
<i>Yomiuri</i>	1116	51 (4.6%)	5 (0.0%)

(2) *Asahi*: Reluctantly positive

Germany, along with France and the U.S. figured prominently in political reactions to the Fukushima disaster as a matter of interest in the *Asahi*’s news coverage when it assessed changes in international nuclear energy policies (or the lack thereof) in the aftermath of 3.11. During the six-month period, we found a total of 1,124

articles in the *Kikuzo II Visual* database (the *Asahi* newspaper company’s database) referring to the issue of nuclear energy and political measures. Slightly less than one-quarter (241 articles out of 1,124) referred to nuclear energy in the context of political measures and nuclear energy generating countries. In 93 articles, Germany’s situation was mentioned, while 22 articles referred to Germany in the context of nuclear energy policy as their main theme. The highest numbers of articles compared to the other three newspapers as shown in the following sections.

Table 2 Attitude towards nuclear phase-out in the context of Germany’s nuclear energy policy shift: *Asahi*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	100.0%	0.0%	0.0%
International	15.9%	34.6%	49.5%
Economy/Finance	0.0%	0.0%	0.0%
Politics	16.5%	49.1%	34.4%
Society/Culture	0.0%	0.0%	0.0%
Local	4.1%	0.0%	96.0%

Table 2 summarizes the attitudes towards nuclear phase-out in the context of Germany’s shift in nuclear energy policy and how the general view on that topic differs in the *Asahi* newspaper in comparison to each newspaper’s section. In terms of comparability, we labeled the sections for all four newspapers with these terms, as the section titles between the newspapers differ. Showing only a small rate of positive agreement towards Germany’s political decision to abandon nuclear energy completely as an electricity-supplying source of energy by 2022, it is still the highest rate among the four newspapers. The standpoints between negative and neutral towards Germany’s political change after Fukushima is somewhat balanced in the major sections. This is also evident where the *Asahi* has a rather balanced coverage between the German ruling party (CDU/CSU) and the major opposition party (SPD).

While the *Asahi* implemented expressions describing the legal implementation of the nuclear phase-out citing German media, which reflects a rather positive attitude, the narrative of describing the “Fukushima Effect” on Germany is reluctantly positive on the one hand, but presenting a rather critical view on the question as to whether Japan should pursue a similar path. Major themes such as changes in energy policy and the narrative of Germany’s uniqueness in terms of legal fundamentals provided by both the European Union as well as domestic politics with the emergence of the Green party in 1980 and the effect of the Chernobyl incident of 1986 on political and social attitudes towards nuclear energy are prominent. These are experiences that pertain only to the German situation as explained in section 1. The question arose whether these fundamental differences, and the attention by the international society towards Japan during the Fukushima crisis can eventually channel pressure to promote political and social change.

Social responsibility and a strong civil society, a long history of persuasive environmental movements in Europe⁷ in contrast to Japan’s weak civil society as assessed by the *Asahi* are emphasized when discussing the existing fundamentals for successful political change in Germany. Technological capabilities to increase the electricity imports as a substitute for electricity supplied by nuclear energy reactors from its neighboring countries are seen as a further advantage⁸. Thus, even though Japan’s responsibility to consider the same path

⁷ E.g. *Asahi*, March 16, 2011

⁸ E.g. *Asahi*, June 7, 2011

as Germany is part of the discussion, the cognitive distance put between them prevents direct pressure on politics and society in Japan to supersede Germany in the role of forerunner in energy policy matters, noting Fukushima as a chance for change. With 54 nuclear reactors, Japan faces a greater challenge of being able to provide substitutes for nuclear energy as its main energy source compared to Germany, which is considered to be more likely capable of succeed with its energy shift, having only 17 nuclear reactors to substitute with other energy sources and a strong legal framework for renewable energy sources along with consensus between the public and the government. In this context, the wide gap between public opinion and the government in Japan as a key aspect was supported by a survey conducted by the *Asahi* among seven major nuclear countries (Japan, US, France, Russia, Korea, Germany and China) aiming at assessing attitudes towards nuclear energy and its further use after Fukushima⁹. According to this poll, 73% of the Japanese public was against the further use of nuclear power. However, consideration of Germany's historically deep anti-nuclear "green" ideology in terms of environment and energy policies, as well as the major role of the German government under Chancellor Merkel (CDU) in strong cooperation with the BMUB during the respective time period, provides the ground for successful implementation of a new legal framework, which led ultimately to nuclear phase-out. The actual "reverse Fukushima Effect" by Germany's sudden shift in energy policy, is limited to longitudinal economic effects, which was hardly mentioned in the *Asahi* but plays a much greater role in the *Mainichi* newspaper.

(3) *Mainichi*: A hollow frame

For the investigation of the *Mainichi*, we used the *Maisaku Mainichi* database provided by the *Mainichi* newspaper company. In a total of 941 articles in the context of nuclear energy policy measures, there were 178 articles focusing on international news coverage of nuclear-energy-generating countries and nuclear-energy policy measures in the context of 3.11. Roughly one-quarter (46 of 178 articles) mentioned Germany, but only 7 articles featured Germany as a main theme. The possibility of a "reverse Fukushima Effect" can be considered negligible assessing the quantity of the news coverage regarding Germany's energy policy decisions. However, in regards to how previous study positioned the *Mainichi* in the overall nuclear energy debate in Japan together with the *Asahi* as pro-denuclearization, the results were unanticipated.

Table 3 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Mainichi*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	0.0%	100%	0.0%
International	0.0%	39.3%	60.74%
Economy/Finance	0.0%	100.0%	0.0%
Politics	0.0%	52.7%	47.3%
Society/Culture	0.0%	0.0%	100.0%
Local	0.0%	0.0%	100.0%

The articles in the *Mainichi* appear to have taken a political economic standpoint regarding international and domestic political measures on energy policies under the "Fukushima Effect". Table 3 demonstrates this clearly, as the attitudes that arose in the context of Germany's nuclear phase-out appear to be strongly negative. Concern with the economic repercussions for Japan due to Germany's energy shift, along with environmentally

⁹ Published on May 27, 2011.

strong European institutions on a broad scale, prevent forming conclusions as to a direct “reverse Fukushima Effect” in terms of promoting a more robust anti-nuclear energy policy in Japan. Moreover, the news coverage of international influence in the *Mainichi* newspaper is almost non-existent.

While former Prime Minister Kan Naoto assessed the possibility of implementing a new energy policy framework in early April 2011¹⁰, the *Mainichi* emphasized the necessity of fulfilling international responsibility towards climate change and decreasing CO2 emissions, noting that Japan depends on nuclear-energy electricity-generating reactors. Moreover, Japan would have to increase its efforts to fulfill the 2020 target set by the international society in order to tackle climate change.

The *Mainichi* is similar to the *Asahi* in referring to the lack of a strong anti-nuclear movement in Japan. A few anti-nuclear sentiments in Japanese society can be found, but in general, the articles suggest that there is no strong anti-nuclear movement in Japan present to catalyze change, because society does not raise its voice¹¹. Nuclear power is discussed in regards to energy policy being strongly connected to the economy and is institutionally distant from environmental institutions. This is a major difference compared to Germany where nuclear energy regulation has been located in the environmental ministry since 1986. The energy ministry’s anti-nuclear policy as defined by the SDP and any capabilities for political change in Japan regarding energy policy are topics that were not addressed in the *Mainichi* articles. However, to pose the hypothesis of whether to detect an attitude to change governmental institutions in Japan, the analysis provides evidence that the *Mainichi* promotes the status quo, as its articles appear to favor the economy.

As the German government under Chancellor Merkel (CDU) decided to postpone its nuclear phase-out policy after successful lobbying by nuclear-energy-generating industries a few months prior to the Fukushima accident, which was already defined by the 1998-2005 government of Germany’s SPD/Green Party coalition, the nature of the *Mainichi*’s “Fukushima Effect” regarding Germany may be referencing how Germany came clear with its antagonistic policy regarding its postponed nuclear phase-out. While indicating the required increase of electricity import from its neighboring countries to compensate for the lost energy source of nuclear reactors, the *Mainichi* shows a general skepticism towards Germany’s anti-nuclear energy policy. Putting pro-nuclear countries in a more dominant position in the context of issuing Germany’s energy policy supports a weak image of the German government. This aspect is focused on more closely by the *Nikkei*.

(4) *Nikkei*: Strong frame of Germany’s anti-nuclear green party to promote a pro-nuclear path in Japan

The number of articles appearing in the *Nikkei* is similar to that of the *Asahi*. We found a total of 1005 articles using the *Nikkei Telecom 21* database. In 73 articles, Germany appeared in the context of nuclear energy and political measures, while 18 had Germany as the main theme. Table 4 shows that the *Nikkei* is more reluctant to show a strong attitude towards Germany’s decisions regarding its energy policy under the influence of the Fukushima disaster, as the attribute values of the coded content is focused around the “neutral” characterized sentiment. Where in comparison the *Asahi* shows more evidence to be positive and the *Mainichi* to be negative opted. An interesting result is the *Nikkei*’s attitude in the section “Politics”, where the newspaper is divided between positive (17.4%), negative (48.6%) and neutral (34%).

In general, the *Nikkei* shows a strong sentiment towards the major anti-nuclear party in Germany, *Bündnis 90/Die Grünen*, referring on various occasions to one of its founders Jürgen Trittin¹² and constructing news coverage of nuclear energy policy measures regarding Germany around this image. However, in assessing the

¹⁰ Issued on April 5, 2011.

¹¹ E.g. *Mainichi*, August 7, 2011

¹² Since the 1980s, Jürgen Trittin has been one of the main political actors of the Green Party and was a Diet member until 2013.

question whether a fundamental political change would be possible for the high technological Japan¹³, the Chernobyl-experienced Germany with its strong environmental lobby could be compared to Japan's economic lobby in relation to political decision-making processes regarding energy issues. This may suggest that similar measures in Japan would require social and institutional changes.

Table 4 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Nikkei*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	0.0%	50.3%	49.7%
International	0.0%	54.3%	45.7%
Economy/Finance	0.0%	0.0%	100.0%
Politics	17.4%	48.6%	34.0%
Society/Culture	0.0%	0.0%	100.0%

While assessing the possibility for the European Union to strengthen its position regarding environmental and energy policies towards its member states through Germany's influential power, strengthening environmental anti-nuclear power movements in European politics, the *Nikkei* emphasizes the effect that Fukushima had on anti-nuclear sentiment in supporting parties among European member states, particularly in Germany but also in France. Where the *Nikkei* emphasizes the need to increase electricity imports from France and Russia by Germany to compensate for shutting down nuclear reactors and putting the burden of increased costs to proceed with its anti-nuclear policy on its neighboring and economically smaller countries such as the Czech Republic throughout its news coverage, constructs a negative frame around Germany's energy policy decisions. In addition, the argument of a total nuclear phase-out in Germany would be only a label, because a complete phase-out is not possible considering its increased import rate from its neighboring countries, supporting our findings shown in table 4. Thus, the positively shaped image through the focus on the major anti-nuclear party of Germany must be evaluated with caution.

The issue of high costs for political change is a strong frame in the *Nikkei*, considering the intense financial burden for the country due to the Fukushima disaster. Quantitatively similar to the *Asahi*, the *Nikkei* places more attention towards Germany's situation under the Fukushima effect but is far more critical in assessing its nuclear phase-out. While emphasizing Germany's cause of action to be no option for Japan due to high costs in terms of energy sources and questioning the actual validity of Germany's political shift, the main frame of the Fukushima effect focuses on Germany's critical economic situation for both society and industry due to the political decision of the nuclear phase-out. However, the framework for a successful implementation of its new energy policy fits into Germany, but would not be applicable in Japan.

(5) *Yomiuri*: Renewable-Nuclear-Energy mix

Through the *Yomidasu Rekishikan* database of the *Yomiuri*, of a total of 1,116 articles, 164 articles appeared in the context of nuclear energy policy measures taken in nuclear-energy-generating countries. Germany appeared in that context in 51 articles, where only 5 had Germany as a main theme, but figured a rather neutral/positive attitude towards Germany's political decisions and is less negative in general than findings of previous researches expected.

¹³ E.g. *Nikkei*, June 2, 2011.

Table 5 Attitude towards nuclear phase-out in the context of Germany’s nuclear energy policy shift: *Yomiuri*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	49.4%	0.0%	50.6%
International	0.0%	0.0%	100.0%
Economy/Finance	70.1%	0.0%	29.9%
Politics	0.0%	67.1%	32.9%
Society/Culture	0.0%	0.0%	100.0%
Local	0.0%	0.0%	0.0%

The results in Table 5 suggest that Germany was not a major issue in the *Yomiuri* in the respective time frame we investigated after the Fukushima disaster occurred and shortly after Germany set its legal framework of an anti-nuclear energy policy. In the newspaper articles, mentions of Germany were quite few. Thus, the analysis shows attitudes towards Germany’s nuclear phase-out as being generally neutral, if mentioned at all, and the role of the “Fukushima Effect” in the discussion is negligible.

While the issues of financial burden on the nation to implement its energy policy measures and Germany’s anti-nuclear policy-driven influential power on European institutions appeared in the *Yomiuri* (similar to the *Nikkei*), the *Yomiuri* put a stronger focus on the topic of renewable energies compared to the other three newspapers and emphasized expectations of changes in attitudes towards nuclear energy in Japan as well as internationally. Even though the *Yomiuri* sees validity in pursuing the discussion to eventually promote renewable energy in Japan, due to Fukushima’s impact on reconsidering renewable energy possibilities on a global scale, it will not become a nuclear free country, considering nuclear disaster experienced nations such as the U.S. (referring to the Three-Mile Island accident in 1979) and European nations (Chernobyl in 1986) developed nuclear energy technologies as their main energy source¹⁴.

In general, the issue of nuclear energy safety and pressure from focused international attention towards Japan are put in the center of the frame, where international responsibility in terms of measures against climate change dominates the discussion. The strong negative amplitude shown in Table 5 in the politics section is rooted in a frame where information regarding an anti-nuclear phase-out movement in Germany consisting of the nuclear-energy industry (RWE, E.On), diet members within the ruling party (CDU) and social movements. But because of the actual strong consensus among politics, society and eventually industry in Germany regarding anti-nuclear energy policy decisions, this frame did not appear repetitively. The questionable journalistic value of the *Yomiuri* regarding news coverage in the aftermath of 3.11 previous studies assessed, cannot entirely be affirmed, if we compare the framing of the news coverage about Germany’s nuclear energy decisions in the aftermath of 3.11 by *Yomiuri* with the *Nikkei* or the *Mainichi*, but the little number of articles covering Germany, may present a false image and must be addressed with caution, when assessing *Yomiuri*’s journalistic value.

Germany is put into the narrative of renewable energies while pointing out difficulties to implement a similar framework in Japan as high costs are involved. Where the *Nikkei* saw the issue regarding Germany’s measures to increase the import rate of electricity from its neighboring countries very critically, the *Yomiuri* saw this option as an advantage to implement a new political framework. Considering the result of Fukushima to lead to a complete abolishment of nuclear energy, this would have a great impact on climate change¹⁵. Implementing higher safety measures for nuclear energy is considered to be a more realistic solution.

¹⁴ E.g. *Yomiuri*, March 25, 2011

¹⁵ E.g. *Yomiuri*, March 24, 2011

6. Conclusion

Ultimately, the instrumentalized Fukushima Dai'ichi nuclear plant crisis propelled the issue of nuclear energy policy, including safety, from being a national policy concern to an international topic. During the six-months period following the Fukushima accident, Germany became a forerunner in abolishing nuclear energy and became an international ideal with its *Energiewende*. However, in comparison, Japan has not taken a similar step. Our findings do not clearly indicate if news coverage of international nuclear power decisions exerted pressure on the DPJ's attempt to abolish nuclear energy or, in the larger picture, canalize international pressure on Japan to change its nuclear policy. However, our comparative analysis of the coverage in the four Japanese newspapers with regards to Germany and nuclear energy policy show diversity in attitudes and opinions in the coverage of Germany's experience, as well as diversity in the policy dimensions in which the topic of nuclear energy policy is discussed.

While framing theory suggests a way of constructing a frame of how one event influences how a topic is perceived by the audience and eventually affects political decision-making processes, in this case, it might be more appropriate to categorize what the frames do not include. When assessing the quantitative news coverage of international nuclear energy policies and their influence on attitude change, the level of interest among the newspaper readership is a major factor. The research reported within does not address that element, and this may be considered a weakness. However, this also suggests a further line of inquiry as research progresses in this area. In addition, in terms of assessing the "Fukushima Effect," the few number of articles in each newspaper suggests that the German case was quantitatively not represented strongly enough to have a qualitative impact. In fact, if we look at the aggregate number of articles covering the issue of nuclear energy policy in general during the six-months period, as well as including those covering nuclear energy policy in relation to nuclear-energy-generating countries, the impact rate of news articles covering the case of Germany must be considered negligible. This in itself poses a possible future direction in this research trend to assess if nuclear power policy is considered to be solely a domestic issue or an international issue.

In terms of differences among the newspapers in general, while the articles in the *Yomiuri* and the *Mainichi* did not appear to emphasize news coverage of Germany's sudden energy transition as a reaction to the Fukushima Dai'ichi nuclear disaster, Germany's situation was a common thread among the articles in the *Asahi*. Whether this difference could be explained in terms of each newspaper's ideological background (the *Asahi* is considered to be the most liberal of the four newspapers) is also an avenue for further investigation. The critical voice of the *Nikkei* towards Germany's shift in abolishing nuclear energy to sustain itself through renewable energies, while putting its neighboring countries in a weaker position and forcing more burden on them to sustain Germany's energy demands in the transition phase until it can sustain itself with renewable energy technologies, reflects Japan's cultural and geographical background as an island state and its immediate need for self-sustainability. The anti-denuclearization *Yomiuri* showed a more neutral/positive attitude towards Germany's *Energiewende* than previous researches suggested. However, the negative frame of Germany's anti-nuclear policies were closely tied to Japan and its lacking capabilities to pursue a similar path, while the neutral/positive majored narrative in the *Yomiuri* emphasized the individual position Germany is having, in regards to the different conditions in Japan.

In conclusion, our assessment of the frames and attitudes concerning nuclear energy policy in Germany as reported in Japanese newspaper articles revealed major differences in the coverage of international energy policy and its possible influence on future policy directions in Japan.

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From the Editorial Committee

With this year's *Journal of International and Advanced Japanese Studies* (Volume 8), we are very pleased to offer a broad range of research articles and research notes that demonstrate the extensive academic research in the area of International and Advanced Japanese Studies. In addition to our print edition, similar to last year, we also offer a wide selection of research articles and research notes in our online edition, which can be found at <http://japan.tsukuba.ac.jp/research/>.

Both editions of this year's *Journal* feature studies that address important historical and current issues facing Japan, in-depth analysis of Japanese language functions, and comparative viewpoints concerning Japan. We received a large number of manuscripts and conducted a careful and thorough review process. Given the diverse nature of International and Advanced Japanese Studies, we also sought diversity and balance in the range of research articles and research notes included in this year's editions.

We would like to express our gratitude to the following people who contributed to our journal editions this year. First, we would like to thank our authors for considering our journal as a venue for their research and who also worked very hard on their contributions. We would also like to thank our Program Chair, Dr. Koetsu Sato, for his leadership and encouragement throughout the process of creating both editions of the *Journal*. Finally, we would also like to thank our administrative staff at the Master's and Doctoral Program in International and Advanced Japanese Studies, as well as our printing company, Inamoto Printing, for their contributions in creating the *Journal*.

編集委員会より

本年度の『国際日本研究』第8号により、国際的で先進的な日本研究の領域における幅広く学問的な研究を体現する、広範な分野に及ぶ研究論文と研究ノートとをここに提供できることは、私たちにとって大きな喜びです。本年度は従来からの印刷版に加えて、<http://japan.tsukuba.ac.jp/research/> で公開されるオンライン版においても、幅広く選ばれた研究論文と研究ノートが提供されます。

本年度紀要は、印刷版・オンライン版いずれについても、日本が直面している重要な歴史的・今日的問題や、日本語の機能に関する詳細な分析や、日本に関する比較の視点を扱う研究を集めたという特色があります。私たちは多くの原稿を受理し、注意深く徹底的な査読のプロセスを実行しました。国際的で先進的な日本研究の多様な展開をふまえて、本年度の2つの版のいずれにおいても、研究論文と研究ノートの扱う領域が多様でバランスのとれたものとなるようにも努めました。

本年度紀要の編集に貢献された以下の方々に謝意を表したいと思います。まず、自らの研究を発表する場として私たちの紀要を選び、掲載に向けてご尽力くださった本号の著者のみなさまに感謝いたします。また、当紀要の印刷版・オンライン版双方の作成過程を通じてリーダーシップを発揮し、激励をくださった、専攻長の佐藤貢悦先生にも感謝いたします。最後に、当紀要の発刊のためにご協力いただいた、国際日本研究専攻博士後期課程の運営実務を担当するスタッフのみなさまと、印刷製本を担当していただいた株式会社いなもと印刷のみなさまにも感謝いたします。