Nuclear policy change in Japan after Fukushima: Beliefs, Interests, and Positions

Rie Watanabe (Dr. rer. pol)
University of the Niigata Prefecture
In Salzburg

Outline

- Background
- Empirical Research Questions
- Theoretical Background
- Hypotheses for this study
- Development of Nuclear Policy Subsystem in Japan – Positions of main actors before the Fukushima accident
- Change/No change of positions of main actors after Fukushima
- Conclusions: Factors explaining large-policy change after Fukushima

Nuclear policy changes in Japan after Fukushima

According to theories of policy change, a crisis can trigger non-incremental or major policy changes (e.g. Baumgartner and Jones 1993, Kingdon 1995, Sabatier and Jenkins-Smith 1993, 1999, Birkland 2005, Sabatier and Weible 2007).

→ Several major changes indeed took place in Japan's nuclear policy after Fukushima.

E.g.

- Setting up lifetime of nuclear power plants at 40 years (maximum 60 years),
- Establishing Nuclear Regulation Authority (NRA) under the Ministry of the Environment,
- Undertaking the Deliberative Polling in the summer 2012,
- Adopting innovative energy and environment strategy, that aimed the phase-out of nuclear power plants in the 2030s (September 14, 2012)

Theoretical Background: Crisis and Policy Change

- Policy change takes place through the interplay of actors in a specific policy domain (policy subsystem) (e.g. Sabatier and Jenkins-Smith 1993, 1999, Baumgartner and Jones 1993, Birkland 2005).
- Actors who share beliefs or interests tend to form groups or coalitions in order to translate their beliefs into, or realize their interests through, public policy (e.g. Sabatier and Jenkins-Smith 1993, Baumgartner and Jones 1993, Hall 1993).
- Any move by a disadvantaged group attempting to translate its beliefs or interests into public policy and to induce policy change is usually resisted by the advantaged who usually afford larger human and material resources.

→ The system typically maintains its equilibrium or stability over time, with only minor adjustments.

Crisis and Policy Change

→ Perturbation, shock, crisis or focusing event works as a catalyst to break such equilibrium by influencing on positions of at least parts of majority coalition and to induce major policy change (e.g. Sabatier and Weible 2007, Baumgartner and Jones 1993, Birkland 2005, Kingdon 1995).

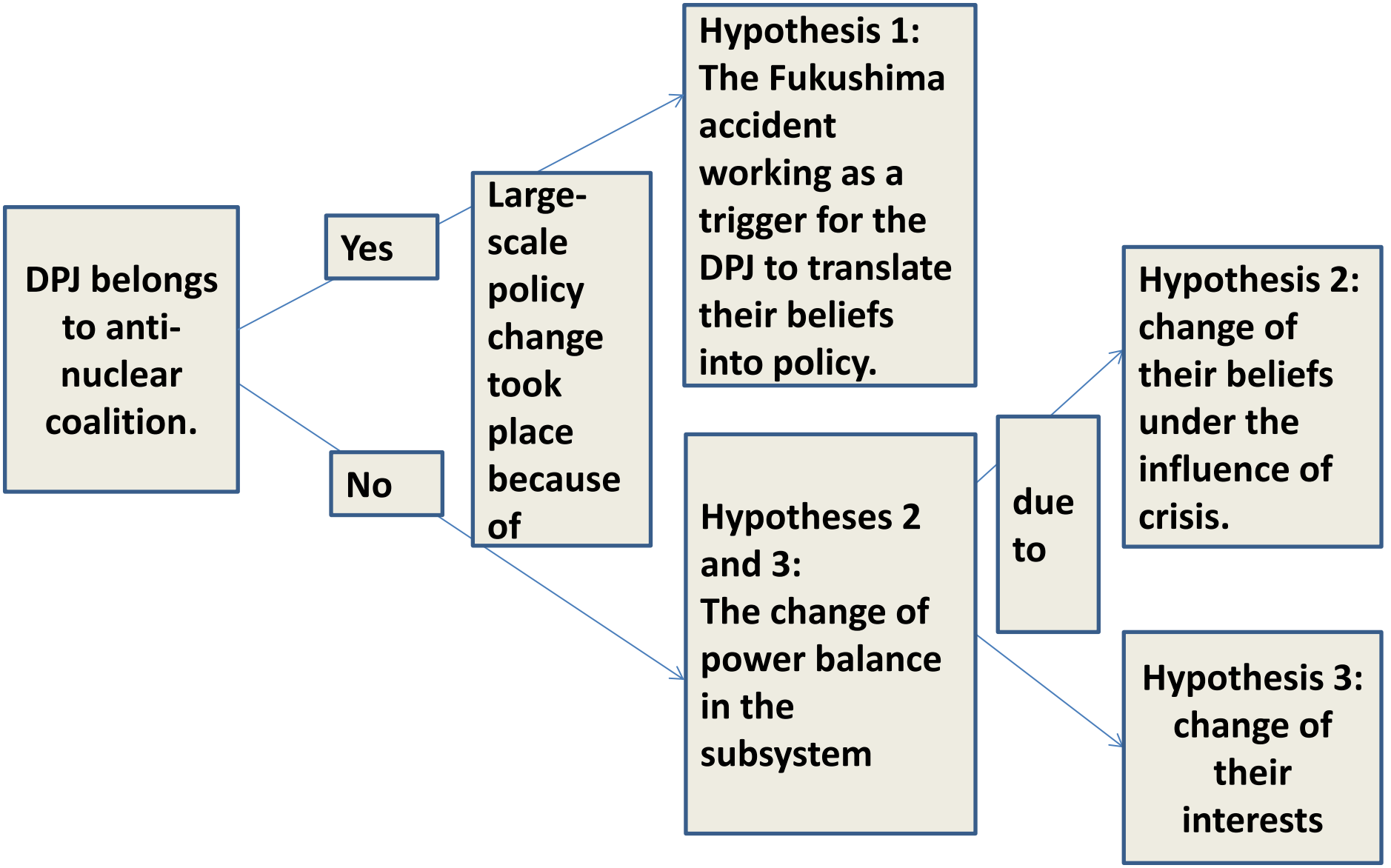
→ However, policy scholars differ how/why majority coalition members changed their positions under the influence of forceful catalyst.

Some said interests change (e.g. Nohrsted 2005), while others beliefs change (Birkland 2005).

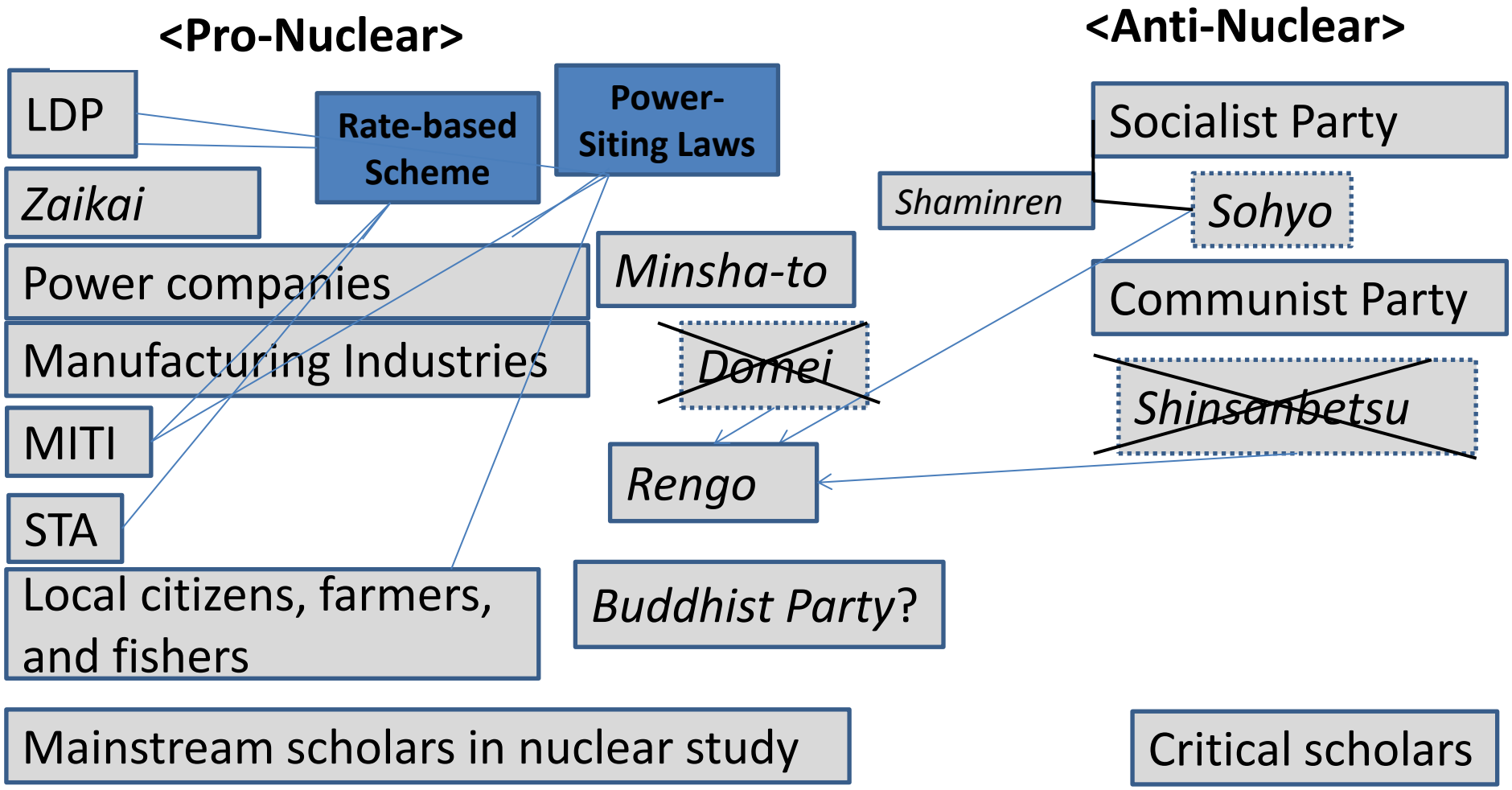
My Research Questions

- What kind of effect does crisis or perturbations have?
- Does crisis affect on actors' beliefs through learning process and induce major policy change?
- Or beliefs do seldom change and interests change under the influence of crisis, which causes major policy change?

Crisis and Policy Change: Hypotheses for this case



Development of Nuclear Policy Subsystem in Japan



Strong pro-nuclear coalition: beliefs and interests

<Shared beliefs>

Nuclear power appeared to be the only viable technology that would enable the reconstruction of Japan, increased production, and economic growth – which would ultimately result in a better life for the general population.

<Interests>

- Business circles (*zaikai*): reconstruct groups of companies under th e control of banks through a government budget to fund the huge cost of nuclear power plant development.
- Power companies: meet the rapidly growing demand for electricity.
- LDP: votes and financial contributions from companies and zaikai.
- MITI and STA: competences

Strong pro-nuclear coalition: beliefs and interests

→They started to neglect the risks of this technology which just started being developed.

E.g. Power companies' estimation of the probability of the accident taking place (1/ 10 million years) < insurance companies' estimation (once in 2100 years) (for Japan once 39 years) (Tokyo Shimbun 2012. 07. 04).

- Local citizens and governments in the siting areas – the only actor joining the pro-nuclear coalition with different beliefs on nuclear risk. "Hosting power plants was regarded by local governments as a path to regional development" (Kainuma 2011).

Institutions for realizing interests

1. The rate-based scheme (1960)

50% of company's capital assets under construction are used as one of bases for calculating electricity price.

→ Power companies are guaranteed lucrative profits by investing in large-capacity power plants "without competition" – the risk borne by electricity consumers.

2. The law for Electric Power Resources Development Promotion (1974)

Power companies: pay a power-resources development tax based on electricity sales, that is passed on electricity price paid by consumers.

Municipalities hosting power plants: get the paid tax distributed (determined by plant capacity).
→Local governments received greater subsidies by hosting nuclear plants.

These schemes institutionalized

- Responsibility of the national government for funding power plant construction,
- Reduction of the burden on power companies,
- The myth "local interests can be realized by constructing more nuclear power plants."

Weak opposition coalition: Beliefs focusing on nuclear risk

1950s: All parties were in favor of nuclear energy use for civilian objectives.

Late 1960s: Citizens' anti-nuclear activities for civilian objectives started in earnest.

→ Left-wing politicians changed their positions from proponents to opponents, but could not maintain cooperation among themselves.

- The Communist Party : opposed nuclear use by Western imperialisms.
- The Socialist Party and Sohyo (the Japan National Conference Against the Atomic and Hydrogen Bomb): opposed nuclear use by any state and for any objective.
- The Minsha-to (center-left party) and the Confederation of Japan Labor Unions (Zennippon Rodo So-domei: Domei) (The National Council for Peace and Against Nuclear Weapons): opposed the use of nuclear power for military objectives, but rather in favor of its use for civilian purposes as long as workers were not at risk of exposure to radioactivity (with the belief that the wealth and growth of companies directly affected labor's wealth and lives).

Nuclear accidents taking place abroad

1979: The TMI accident

- 16 demonstration activities (calmed down by late 1979).
- No change in the general public's view
  - Those supporting nuclear power: 50% in 1979.06, 62% in 1979.12, 56% in 1980.12.
  - Maintained the belief that technological development would prevent the recurrence of nuclear accidents.

1986: The Chernobyl accident - a turning point for public opinion.

  - Those opposing nuclear power promotion (41%) > Those supporting it (34%).
  - Nuclear technologies were uncontrollable.
- The government kept using the same logic as it had after TMI, though.
  - A serious nuclear accident would not happen in Japan's nuclear power plants
  - The technologies used in Japan's pressurized water reactors were different from the Chernobyl RBMK (reactor high-power channel) developed by the Soviet Union
  - Japnese operators were well-trained in preventing serious accidents.

Domestic nuclear accidents

1995: The sodium leak accident at the fast reactor Monjyu (Level 1)

→ Debunked the dominant coalition's claim "Japanese operators were so well-trained that serious accidents could easily be prevented."

1996: Local government's resistance

- The governors of Fukushima, Niigata, and Fukui (host 30/50 nuclear power plants) sent a proposal to the national government designed to improve nuclear decision-making.
- The town of Maki in Niigata Prefecture held a referendum.

→ Discontinuation of nuclear power plant construction by Tohoku Power Co.

1999.9.30: Tokai village JCO accident (Level 4)

→ Nevertheless, local governments could not be decisive due to material interests, i.e. subsidies provided in accordance with power-source siting laws.

Climate change: for-winds for nuclear promotion?

- For achieving the KP 6% target
  - 1998: 20 new nuclear power plants with the objective of increasing the production capacity by 50% over the 1997 level by 2010 (GWPH 1998).
  - 2002: 20 → 10 to 13 (due to the difficulty of finding new sites) (GWPH 2002).
  - In the end, only three new nuclear power plants were built between 1997 and 2010.

Beliefs in the Nuclear Policy

	Pro-nuclear	In-between	Anti-nuclear
Beliefs in nuclear risk	There is no (or negligible) risk that a nuclear accident will happen.	There is a risk that a nuclear accident will happen.	
	There is no (or negligible) risk that human life and health will be endangered due to radioactive materials.	There is a risk that human life and health will be endangered due to radioactive materials.	
Beliefs in technologies	There is a risk of accident, but even if accidents occur, modern (Western) technologies can limit their severity.	The risk of accident is uncontrollable by modern (Western) technologies.	
Beliefs in management skills (training)	There is a risk of accident, but even if accidents occur, modern (Western) management skills can limit their severity.	The risk of accident is uncontrollable by modern (Western) management skills.	

Source: Made by Rie Watanabe

Beliefs in the Nuclear Policy

	Pro-nuclear	In-between	Anti-nuclear
Beliefs in information dissemination	There is a risk of accident, but if one occurs, proper information will be provided by government or power companies to avoid the worst case. (Experts will provide proper information once an accident happens.)		There is a risk of accident, and if one occurs, proper information will not be provided by government or power companies to avoid the worst case. (Experts will hide proper information once an accident happens.)
Beliefs in nuclear benefit	Nuclear is the only viable option for Japan, a resource-scarce country, to ensure energy security and climate protection.		Nuclear is not the only viable option for Japan to ensure energy security and climate protection. There are many renewable sources.
	Nuclear is cheaper than other fuels.		Nuclear is not cheap if back-end and accident recovery costs are taken into account.

Source: Made by Rie Watanabe

End of the 1955 regime and Birth of DPJ

1993: The LDP became an opposition for the first time since 1955.

- Bribery scandal of the influential LDP members (the end of 1980s to 1990s).
- Many influential politicians left the LDP and formed new parties.

1994: The LDP returned to the ruling government

→Slight improvement of the transparency of decision-making (due to coalition partners).

DPJ = Members ranged from the center-right to the center-left.

Birth of Democratic Party of Japan (DPJ)

1996: The DPJ's Foundation

- Yukio Hatoyama and Naoto Kan (Sakigake),
- Yoshihiko Noda, Yukio Edano, and Goshi Hosono (Nippon Shinto),
- Defectors from the Social Democratic Party – the successor to the Socialist Party (Yoshihito Sengoku).

1998: Jiyu-to led by Ichiro Ozawa (LDP) joined DPJ.

<Shared objective>: Establish a party that could compete with the LDP, thereby realizing a two-party system in Japan.

But Difficult to form the unified position on nuclear policy due to varied political lines of members

- Former LDP members: pro-nuclear,
- Former Socialist party members: rather anti-nuclear,
- Former Minsha-to members; rather pro-nuclear.

DPJ's position on nuclear issues before Fukushima

After being elected, the party drove towards nuclear promotion for achieving other (climate and economic)policy objectives.

=Typical positioning of in-between actors

- Under Yukio Hatoyama
  - Construction of new nuclear power plants for reducing GHG emissions by 25% in 2020
  - Export of nuclear technologies for achieving a 3% annual economic growth (in its manifesto)

- Under Naoto Kan
  - Adoption of the basic energy plan towards 2030 (June 2010)
    - Construction of 9 new nuclear power plants by 2020 and in total 14 nuclear power plants by 2030, for achieving energy security, reducing CO2 emissions by 25% in 2020, and realizing the co-existence of environment protection and energy supply.
  - Conclusion of the agreement with Vietnam to export nuclear technologies from Japan(October 2010)

Hypothesis 1: Denied

→DPJ was in the pro-nuclear coalition before the Fukushima accident.

- Main members were not the core of the pro-nuclear coalition who had economic interests in promotion (cf. some of LDP received donation from power companies or Federation of Electric Power Companies),
- They shared the beliefs in nuclear benefits.

→The first hypothesis that large-scale policy change after Fukushima took place due to change in governing coalition from LDP to DPJ in 2009 is denied.

Hypotheses 2 and 3: Change of power balance in Japan's nuclear power system?

<Power companies>

Maintain their positions and beliefs on nuclear risks and benefits to the extent to urge early recommissioning of existing nuclear power plants.

- Financial damages
  - Compensation borne by the Tokyo Power co. : 4540.2 billion yen → Tokyo power co. paid 2619.2 billion yen as of July 26, 2013
  - The price of stocks of Tokyo power co. : 2151 yen (2011. 03.10) → 1621 yen (2011. 03.14) → 566 yen (2011.03.09)
- Financial benefits??
  - Increase of fuel costs for running coal fired power plants: 2300 billion yen in 2011, 3100 billion yen in 2012, and 3800 billion yen in 2013 (METI 2013)

→ As soon as the Nuclear Safety Regulatory Agency published the criteria for recommissioning, Hokkaido, Kansai, Shikoku, and Kyushu power co. applied for recommissioning 5 nuclear power plants.

Hypotheses 2 and 3: Change of power balance in Japan's nuclear power system?

Yet, the Investigation Committee established in the TEPCO: "The fundamental cause of accident attributed to unexpected tsunami. The operator's skill or the delay of information sharing did not have any influence on the response to the accident."

Cf. Other Investigation Committees established in the Diet (Kurokawa Committee), in the Cabinet (Hatamura committee), and the Independent (Independent) indicated the operators' being unfamiliar with IC operation as an additional factor (Kurokawa Committee even mentioned that it could be a manmade disaster.)

Hypotheses 2 and 3: Dominant coalition changed their positions?

<Nippon Keidanren>: shared the same view with power companies.

2011.11.07 : "*If stable electricity supply is not secured, there is a huge negative impact on people's lives as well as industries, in particular manufacturing sectors. (…)With the condition to secure local trust in nuclear energy, it is desired to recommission nuclear power plants. Then companies can naturally make various investment plants*. "

2012. 09.18 (after announcement of innovative energy and environment strategies) *"(With innovative strategies), deindustrialization in Japan will be accelerated. Obviously the maintenance of employment will get difficult. If "no nuclear operation" is announced, it will be difficult to secure technologies and human resources for ensuring nuclear safety. …… Such strategies are unacceptable for business communities. We strongly request the government to draft responsible strategies from the beginning."*

Hypotheses 2 and 3: Dominant coalition changed their positions?

<LDP>

→ Not necessarily changed their positions, beliefs on nuclear benefits and interests.

2011.03.17: Soichi Tanigaki "*The current situation does not allow promotion of nuclear power plants*."

2011.03.24: "There is a problem of if manufacturing sectors can survive in Japan without securing stable electricity supply".

2011. 05: The LDP established the joint meeting of energy policies (with the former Minister of Economy, Trade, Industry Akira Amari, the former vice president of TEPCO, Tokio Kano, etc.

2012.12: The LDP u-turned the DPJ policy on nuclear phase-out. They also started preparing for recommissioning of existing nuclear power plants.

Hypotheses 2 and 3: Dominant coalition changed their positions?

<DPJ> Not necessarily changed their positions.

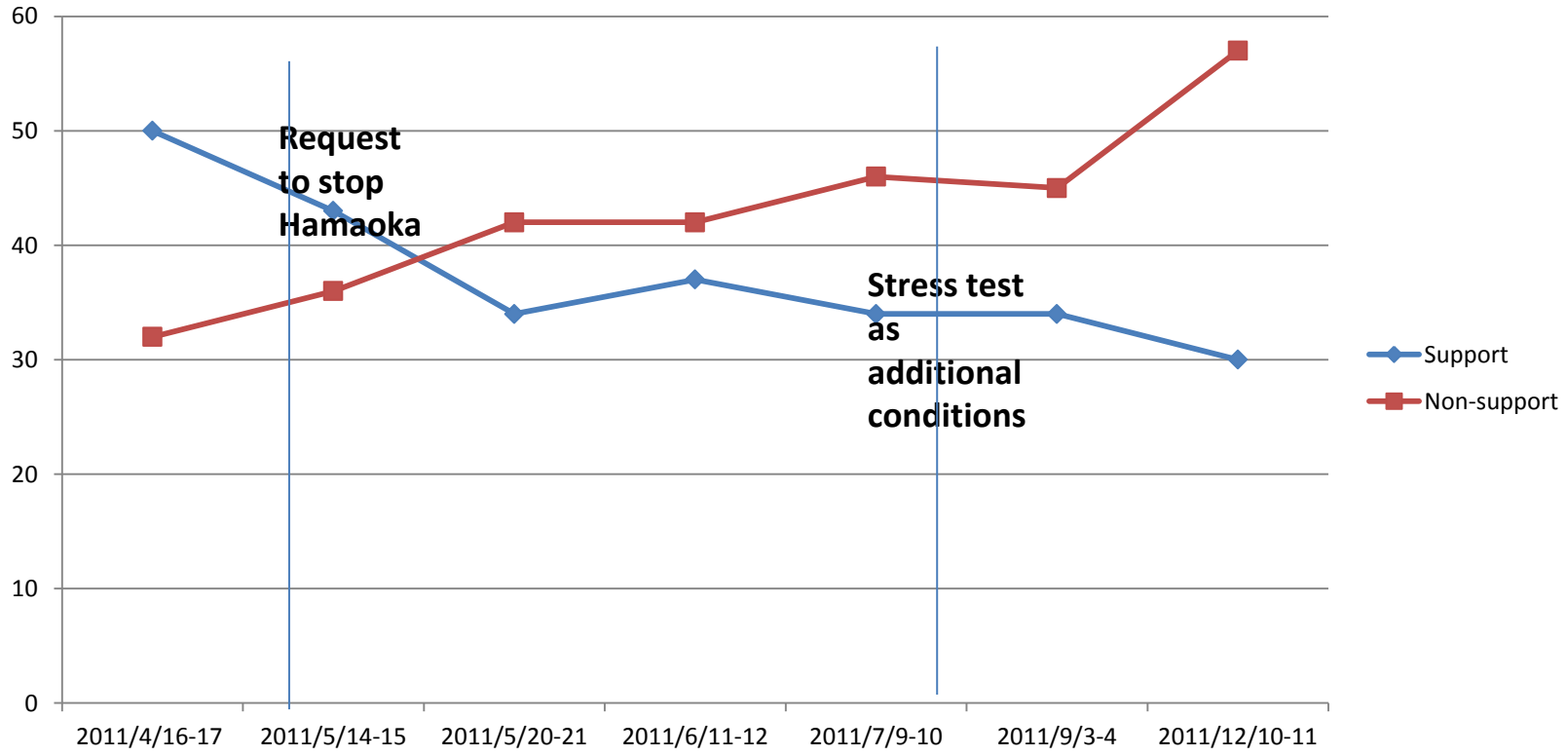
Hamaoka case

- Kan “The Hamaoka was the special case”.
- Takeshi Hosono, Minister of the Environment “The request to stop the Hamaoka did not represent the government will to stop all nuclear power”.
- Yukio Edano, Cabinet Secretary “The basic line of nuclear policy had not changed. “
- Yoshihito Sengoku, Chairman of Policy Affairs of DPJ: “Nuclear power would be maintained as strategy and policy.”

DP case

- Yoshito Sengoku , Acting Chairman of Policy Affairs: “0% in 2030 was unrealistic. It is difficult to achieve phase-out of nuclear power in 20 years”.
- Takeshi Hosono, Minister of the Environment: 15% option was the base.

Hypotheses 2 and 3: Dominant coalition changed their positions?



Opinion polls concerning nuclear power use (undertaken by Asahi Shimbun) made by author
Data source: Asahi Shimbun

Three options for future energy plan

	Percentage of nuclear	Percentage of renewables	Percentage of coal and oil	Nuclear waste	GHG emissions reductions	Impact on Economy
Phase-out nuclear as soon as possible	0	35	65	reclamation	-23	1.4-2.1
Decommissioning nuclear power plants after 40 years lifetime	15	30	55	reclamation or reprocessing	-23	1.4-1.8
Reduce the dependency on nuclear but keep using	20-25	25-30	50	reclamation or reprocessing	-25	1.2-1.8
Current	26 (2010)	10	64	reuse	-0.3	1

Data Source: National Policy Unit (2012)

Results of Deliberative Polling

	Phone (July)	Before (August 4th)	After (August 5th)	Public hearings	Public comments	Opinion polls (Asahi Shimbun)
No support	13.7	13.7	9.5			
Multiple support	23.9	13.7	15.4	5	6(4)	
Support for the 20-25% option	13.0	13.3	13.0	16	3(6)	12
Support for the 15% option	32.6	18.2	15.4	11	1	29
Support for the 0% option	16.8	41.1	46.7	68	90(87)	49

Data Source: Asahi Shimbun

Conclusions

- After the Fukushima disaster, several large-scale policy changes took place in Japan.

- The Fukushima disaster did not change positions of main actors in the nuclear policy subsystem, in particular existing nuclear power plants.
  - Business actors, in particular power companies, as well as LDP did not change their positions with regards to the existing nuclear power plants.

- Large-scale policy changes in Japan's nuclear policy subsystem most likely took place not because of the change of power balance in the subsystem but because of policymakers' giving priority to the public opinions for vote maximization and representation.

- Although the level of the accident was far beyond crisis, it appeared not induce an immediate change of dominant coalition members' beliefs (at least regarding nuclear benefits).

Issues to be addressed in future research

- The possibility that the disaster had an impact on the dominant coalition members' beliefs on nuclear risks needs to be explored.

→ Can the learning be explained only by interests of DPJ sensitive to public opinions?

- Most changes implemented after Fukushima – including the establishment of the NRA under the Ministry of the Environment, independent of the ministry promoting nuclear power generation; the promotion of alternative energy resources; the development of criteria for re-commissioning nuclear plants; and the limit set on plant lifetime – had been called for after past accidents, but never realized.
- The Fukushima also had a new learning effect to link natural disaster management and nuclear safety - like 9.11 case (Birkland 2005)

→ Can the learning be explained by interests of DPJ, which was very sensitive to public opinions, or partly attributed to change of beliefs on nuclear risks?

→ Will change of beliefs on nuclear risks induce change of beliefs on nuclear benefits (which requires development of alternative resources)?

Photo by Rie Watanabe

Das Vergessenwollen verlängert das Exil, und das Geheimnis der Erlösung heißt Erinnerung (von Weizsäcker, Richard, 1985).

Dr. Rie Watanabe (Dr.rer.pol)
Associate Professor
International Studies and Regional Development
University of the Niigata Prefecture
Email: riew9@unii.ac.jp
Phone: +81-25-368-8339