

# **Cascading Failures, Course Reversals, and Closures: An Analysis of the Federal Republic of Germany's Post-Disaster Nuclear Energy Policy and News Coverage of Nuclear Energy**

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# Synopsis and Research Question

- Focuses:
  - Changes in news coverage after nuclear disasters
  - Policy process of changes to nuclear energy policy after disasters
- Research question:
  - How do nuclear disasters affect the subsequent nuclear energy policies of democratic states?

# Contents/Preview

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- Literature
  - Media coverage
  - Policy theories: Punctuated Equilibrium and Advocacy Coalitions
- Methodology
  - News Coverage
  - Policy process
- Findings
  - Shifts in news coverage
  - Policy Changes



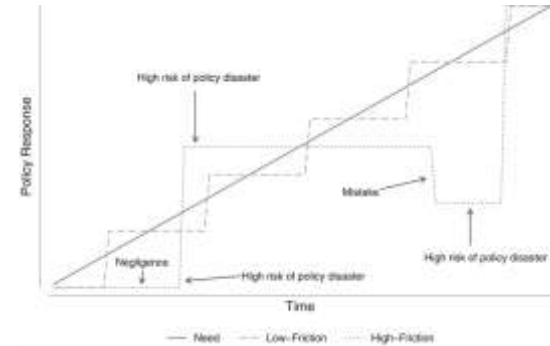
**Top:** Chernobyl Reactor No. 4 after the explosion

**Bottom:** Fukushima Reactors No. 1–4 after the first hydrogen



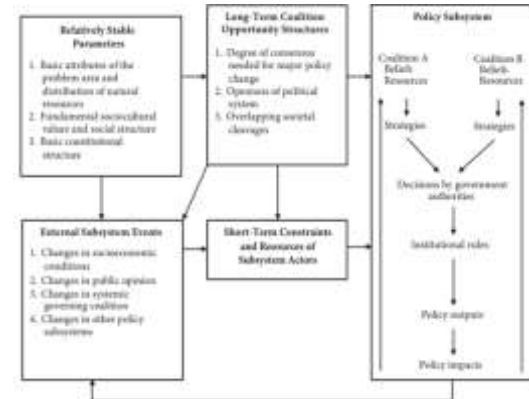
# Literature: Policy Process

- Punctuated Equilibrium Theory (PET)
  - Focusing events
  - Policy subsystem
  - Positive and negative feedback
  - Policy images
  - Leptokurtic distribution of changes
- Advocacy Coalition Framework (ACF)
  - Coalition Hypothesis 2 (basis of a coalition)
  - Coalition Hypothesis 3 (changes in beliefs)
  - Learning Hypothesis 5 (policy brokers)
  - Policy Change Hypothesis 1 (pathways)



**Top:** Stylized representation of PET from Ethan J. Fagan (2023).

**Bottom:** Diagram of ACF from Nohrstedt et al. (2023)



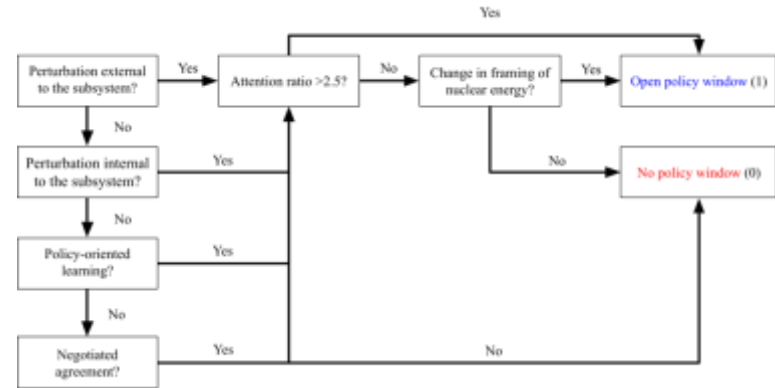
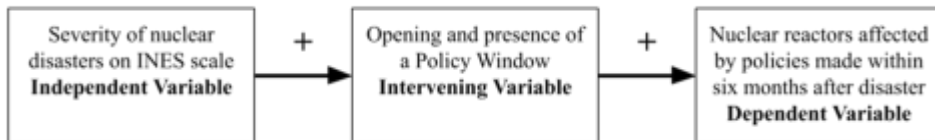
# Methodology: Media Analysis

- Textual analysis
  - Bias; Word choice; Framing; Article Type
- Articles and timeframe
  - Articles mentioning nuclear power in title
  - 6 months before and 6 months after disaster
- Eight groups, up to 10 articles each (see right)
  - Two disasters (Fukushima and Chornobyl)
  - Pre- and post-disaster
  - Two newspapers (*FAZ* and *ND*)
  - Mostly random selection
- Newspapers
  - *Neues Deutschland*: paper of DDR's ruling SED; now independent, but still left-wing
  - *Frankfurter Allgemeine Zeitung*: independent, moderately conservative, close to CDU

Timeframe	FAZ Articles	ND Articles	Total
Chornobyl			
<i>Before</i>	10	6*	16
<i>After</i>	10	10	20
Fukushima			
<i>Before</i>	10	10	20
<i>After</i>	10	10	20
<b>Total</b>	<b>40</b>	<b>36</b>	<b>76</b>

# Methodology: Policy Process

- Longitudinal case studies
  - Process tracing
- Variables
  - **Independent:** severity of disaster (0-7)
  - **Intervening:** presence of policy window (yes/no) (see right)
  - **Dependent:** percentage of reactors affected by laws passed within six months after disaster
- Hypothesis



# Results: Media

Newspaper and Timeframe	Positive Articles	Neutral Articles	Negative Articles
<i>FAZ</i>			
Pre-Chornobyl	1	8	1
Post-Chornobyl	3	5	2
<i>ND</i>			
Pre-Chornobyl	4	2	0
Post-Chornobyl	2	6	2
<i>Pre-Disaster</i>	5	10	1
<i>Post-Disaster</i>	5	11	4
<b>Total</b>	<b>10</b>	<b>21</b>	<b>5</b>

**Table 2.** Results of the newspaper framings during the Chornobyl timeframe.

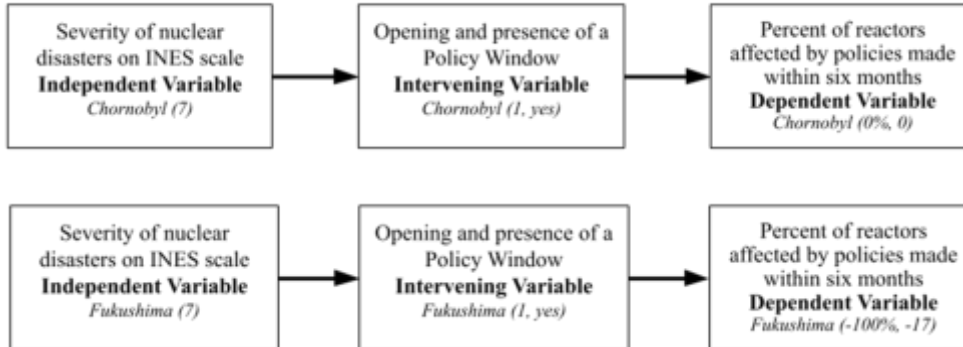
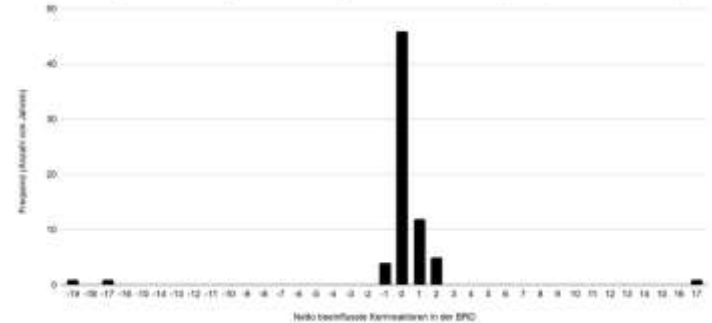
Newspaper and Timeframe	Positive Articles	Neutral Articles	Negative Articles
<i>FAZ</i>			
Pre-Fukushima	3	5	2
Post-Fukushima	1	6	3
<i>ND</i>			
Pre-Fukushima	0	2	8
Post-Fukushima	0	2	8
<i>Pre-Disaster</i>	3	7	10
<i>Post-Disaster</i>	1	8	11
<b>Total</b>	<b>4</b>	<b>15</b>	<b>21</b>

**Table 3.** Results of the newspaper framings during the Fukushima timeframe.

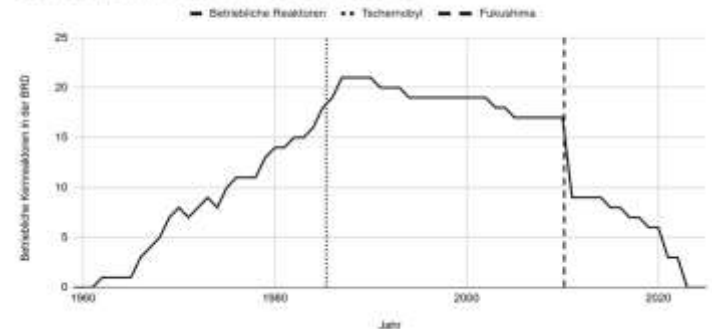
# Results: Policy Process (PET)

- Leptokurtic distribution (see upper right)
- No guarantee of change (see lower right; below)
- Disasters were focusing events
- Changes in policy images

Netto Änderung Reaktoren wegen Entscheidungen beeinflusst und Frequenz (Anzahl von Jahren)

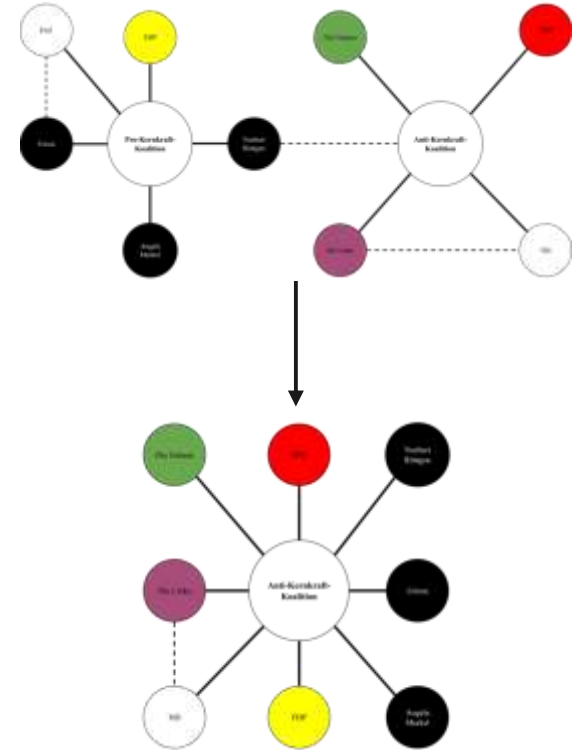


Betriebliche Kernreaktoren in der BRD nach Jahr



# Results: Policy Process (ACF)

- Chernobyl
  - Solidifying of pro- and anti-nuclear coalitions
  - Union and FDP change secondary beliefs
  - No change to *Atomgesetz*
  - Creation of Ministry of Environment, Nature Conservation, and Nuclear Safety
  - Shutdown of non-PWR and BWR reactors
- Fukushima
  - Competing coalitions → unitary anti-nuclear
  - Change in opinion of Chancellor Merkel (Union)
  - Set end dates for all 17 reactors



**Above:** Consolidation of nuclear energy subsystem from adversarial to unitary coalition system after Fukushima.