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The Politics of Crisis Policymaking: Chernobyl and Swedish Nuclear Energy Policy

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Public policy scholars often accentuate the key role of crises in explaining policy change; however, much empirical work still remains to be done in order to explain crisis-induced policy outcomes. This article explores the prediction of the Advocacy Coalition Framework that stable coalitions and impediments to learning reduce the likelihood for policy change after a crisis. Strategic action is emphasized as a supplementary variable focusing on the role of political motivations in post-crisis policymaking. Sweden's decision not to accelerate the nuclear power phaseout following the 1986 Chernobyl disaster provides a case study to assess the utility of these explanations. Findings corroborate theoretical expectations about stable minority coalitions, cast doubts over the presumed rigidity of policy core beliefs, and emphasize strategic action and cognitive heuristics as important motivations for policy choice. The article concludes by outlining three sector-specific variables (ideological salience, level of conflict, and previous crisis experiences) that add to the explanation of crisis-induced policy outcomes.

KEY WORDS: Advocacy Coalition Framework, crisis, policy change, coalition mobilization, learning, nuclear power

Introduction

On April 26, 1986, a low-power engineering test of the Unit 4 reactor at the Chernobyl nuclear power station resulted in a sudden increase in heat production and loss of cooling water, causing a catastrophic steam explosion that completely destroyed the reactor core. Over a 10-day period, winds carried radionuclide releases from the damaged reactor causing severe contamination in vast territories of former Soviet Union republics and over parts of Europe. In response to history's most devastating nuclear accident, several European governments decided to restrict the use of nuclear energy by halting construction and shutting down nuclear reactors, as in Italy and Finland, and by suspending decisions on nuclear power expansion, as in the Netherlands and Switzerland. Compared to other countries outside the Soviet Union, Sweden was particularly hard hit by the accident. As the plume coincided with rainfall, the total deposition from the Chernobyl release was greater in Sweden than in most other European countries (OECD/Nuclear Energy Agency, 2002, p. 44). At first, alarms triggered at the Forsmark nuclear facility in central Sweden caused a major crisis for Swedish authorities, based on the belief that the contamination

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emanated from a Swedish reactor (Stern, 1999). When it became clear that Chernobyl was the source and that Sweden had been seriously affected by the fallout, a legitimacy crisis erupted causing a degeneration of public confidence in the authorities responsible for emergency planning and protection (Nohrstedt, 1991).

Following the observation in the public policy literature that major crises provide short-lived periods of opportunity for nonincremental policy change, one would have expected Swedish nuclear energy policies to change quite dramatically after Chernobyl. As the result of a national referendum initiated after the Three Mile Island accident seven years earlier, the Swedish Parliament had already decided to phase out nuclear power, and just prior to Chernobyl, the government decided that the first reactors should be shut down by the late 1990s. In retrospect, the Chernobyl crisis clearly had the potential to change the Swedish nuclear power phaseout plan. The pressure on the government to accelerate the phaseout process was overwhelming. In response to protests from various societal and political groups, the government declared that it was willing to alter the phaseout timeline if that course of action would be justified by subsequent inquiries. However, one year later, policy developments in Sweden took a different turn when government policymakers decided that the nuclear power phaseout should not be accelerated. In the context of public policy theory, these developments are puzzling: Why did this large-scale crisis not cause any major changes in Swedish nuclear energy policy?

Theoretical Perspectives on Crisis Events and Policy Change

Public policy scholars frequently cite focusing events and windows of opportunity as important explanations for major policy reforms. The basic argument that external events have the potential to "punctuate" institutional inertia and thereby cause major policy reversals is not new. Perhaps a more intriguing issue relates to the variability in crisis-induced policy outcomes and the question of why some crises result in major policy change while others do not (Birkland, 2006; Minstrom & Vergari , 1996; 't Hart & Boin, 2001). Efforts to explain this variance present a number of challenges, not least because it is often unclear which events should actually qualify as crises. A related analytical problem is that the link between crisis and reform can be seen as nonfalsifiable, where the absence of reform can be explained by the fact that the crisis was not severe enough (Kuipers, 2004). The public policy literature has a particularly hard time getting around the problem of nonfalsifiability because many crisis definitions are quite broad. For example, Sabatier and Weible's (2007, p. 220) definition of an external perturbation covers a variety of so-called "external events" including "changes in socioeconomic conditions, public opinion, systemwide governing coalitions, or outputs from other subsystems."[1] Because these conditions are in constant flux, it is difficult to see which events are of sufficient magnitude to produce major policy changes.

From this perspective, Alink, Boin, and 't Hart (2001, p. 290) offer a more coherent definition. In their view, "[a] policy sector is in crisis when its institutional structure experiences a relatively strong decline and unusually low levels of legitimacy." More specifically, their definition covers situations of declining societal,

political, and legal support and acceptance (i.e., legitimacy) for decision-making procedures, policy instruments, and the dominant ideas (i.e., institutional structure) within any given sector. Such "symbolic breakdowns" ('t Hart, 1993) are often triggered by different events (earthquakes, epidemics, wars, terrorist attacks, industrial accidents, economic downturns, etc.). Hence, this notion of crisis stretches beyond common conceptions, which emphasize acute managerial problems (threat, uncertainty, and time pressure) and the functional adaptation of state agencies to these extreme conditions (Boin, 't Hart, Stern, & Sundelius, 2005; Stern & Sundelius, 2002). Furthermore, it presents a more precise conceptualization compared to most other definitions found in the public policy literature, which have a tendency to fuse most "external events" together under the crisis label. In Sweden, the Chernobyl accident gradually developed into an institutional crisis. The accident heightened the level of attention on the nuclear power issue, increased public anxiety, and led to public questioning of the Swedish authorities' ability to cope with the risks associated with nuclear power as well as the government's nuclear energy policy.

Explanatory Lenses

It has been argued that a fully developed theory to explain the crisis–policy change linkage is not available ('t Hart & Boin, 2001, p. 43). In the absence of such a theory, the most well-known theoretical contributions on crisis and policy change include John Kingdon's (1995) multiple streams (MS) model, Frank Baumgartner and Bryan Jones' (1991) punctuated equilibrium (PE) model, and Thomas Birkland's (2006) event-related policy change (EPC) model. While overlapping considerably, these lenses also differ with respect to what they define as the primary dependent variable and the nature of the causal process explaining policy outcomes (Hansén, 2007; Schlager, 1999; Zahariadis, 1998). This analysis of Swedish nuclear energy policymaking in the wake of the Chernobyl crisis explores the assumptions of Sabatier's Advocacy Coalition Framework (ACF). Although the other candidates also view crisis as a key dimension of the policy change process, this article argues that the ACF posits a number of comparative strengths supporting its status as a particularly interesting framework of analysis.

First, the ACF presents fairly coherent operational definitions of its key concepts, including advocacy coalitions, learning, and policy change. These concepts are precise enough to enable a test of the framework's basic claims about crisis and policy change. For instance, the ACF makes a clear distinction between major and minor policy change based upon the distinction between policy core and secondary beliefs, and between the topic, as well as the scope, of policy change (Sabatier & Jenkins-Smith, 1999, p. 147). The MS and PE models do not address this issue explicitly (Schlager, 1999, p. 252), while the EPC model adopts May's typology of different types of learning, although the link from learning to policy change is not always clarified (Gerber, 2007; Reiners, 2007). Second, the ACF directs much attention toward post-crisis policymaking, while the MS and PE models primarily emphasize agenda-setting and "predecision activities" (Schlager, 1999, p. 254). Birkland's EPC model goes beyond the dynamics of agenda setting as it seeks to explain

long-term learning effects. The explanatory variables offered by the EPC model, however, draw key elements from the ACF (including group mobilization and the role of policy ideas). Obviously, theories focusing on the predecision stage are of limited use in clarifying the long-term substantive policy effects of major crisis events. Because it identifies changes in governmental programs as the primary dependent variable (Sabatier & Jenkins-Smith, 1999, p. 147), the ACF is particularly useful in this respect. Finally, within the ACF project, the centrality of the crisis–policy change hypothesis does not match the number of empirical studies addressing this issue. In the view of Schlager (1999, p. 254), ACF scholars have been too busy exploring the structure and development of belief systems while almost entirely neglecting to explain policy decisions. Therefore, as Sabatier himself points out (Sabatier & Weible, 2007, p. 209), studies of post-crisis episodes provide a valuable contribution to the continuous development of the ACF.

Crisis and Policy Change in the ACF

The ACF holds that a crisis may provide an opportunity for major policy change but assumes it needs to be skillfully exploited by proponents of change in order to have any effect (Sabatier & Jenkins-Smith, 1999, p. 148). Pro-change minority coalitions will seek to maximize political resources and, if these efforts are successful, resource mobilization will tilt the balance of power (in terms of redistribution of political resources) within the subsystem and pave the way for major policy change. The other mechanism that couples crisis with policy change is learning, which refers to altered policy core beliefs (Sabatier & Jenkins-Smith, 1999, p. 123).[2] It has been proposed that crises may lead to a new understanding of problems and solutions, which in turn results in policy change. In addition to learning and the mobilization of pro-change minority coalitions, this article introduces strategic action as a supplementary variable explaining dominant coalition behavior in response to crisis.

Minority Coalition Mobilization. Public policy scholars seem to agree that the behavior of pro-change groups is a necessary condition for major event-related reforms. Sabatier and Jenkins-Smith (1999, p. 148) argue that "perturbations provide an opportunity for major policy change but such change will not occur unless that opportunity is skillfully exploited by proponents of change, that is, the heretofore minority coalition(s)." ACF theory assumes that minority coalitions seek to exploit intergovernmental venues and political resources to realize their policy aims. But as the distribution of political resources generally remains stable, the framework postulates that involvement in the "analytical debate" may offer another possibility for minority coalitions to advance their positions. From this viewpoint, minority coalitions "can seldom develop a majority position through the raw exercise of power. Instead, they must seek to *convince* other actors of the soundness of their position" (Jenkins-Smith & Sabatier, 1993, p. 45, emphasis in original). Hence, framing is emphasized as an essentially strategic act by which pro-change groups seek to portray a policy problem in ways that favor their objectives. The goal is to expand the conflict in order to appeal to new actors and to attract broad public attention

to favored courses of action (McBeth, Shanahan, Arnell, & Hathaway, 2007; Schattschneider, 1975). In the wake of crisis, coalition members can be expected to use information in an advocacy fashion and to present technical substantiation for their policy positions. Consequently, framing contests are quite common in these situations and coalitions pursue different "causal stories" or "crisis narratives" on the nature, causes, and severity of a crisis, as well as arguments related to responsibility for its occurrence or escalation (Kuipers, 2004; Stone, 1989). Such contests are assumed to have an impact on policy outcomes, although the nature of this causal path is highly unpredictable (Brändström & Kuipers, 2003). In this context, the ACF predicts that policies endure because all coalitions within a subsystem will frame a crisis event in line with preexisting policy core beliefs, which helps in maintaining the status quo.

Policy-Oriented Learning within the Dominant Coalition. As it is primarily interested in advocacy coalition dynamics, the ACF does not specify the role of incumbent policy leaders (i.e., representatives of the dominant coalition).[3] Hence, it is unclear why coalition leaders in the aftermath of crisis embark on a path of policy change, or decide to maintain policy stability. Most public policy studies on focusing events and policy change do not address this issue explicitly; one reason might be that such studies are predominantly lopsided toward agenda-setting theory (e.g., Birkland, 1998; Godwin & Schroedel, 2000; Kurtz, 2004; Lowry, 2006; Wood, 2006). Although studies have observed covariation between policy change and public demands for change, it should be recognized that as long as the distribution of formal decision authority is not substantially altered, incumbent policymakers remain at least formally empowered to respond to such pressure (Boin & 't Hart, 2003). Some representatives of dominant coalitions are, in other words, "veto-players" who exert significant influence on policy formulation (see Tsebelis, 1995).[4] Therefore, it is important to understand the motives that guide these leaders in response to demands for policy change (Goldfinch & 't Hart, 2003). According to the ACF, government representatives form dominant coalitions (that by definition control policy programs) and use the power of the office to make sure that their core beliefs are transformed into concrete programs. Crises are more likely to generate policy change if dominant coalition representatives develop a new understanding of problems and solutions, although this is rather unlikely due to the presumed rigidity of preexisting beliefs. Instead, policymakers are expected to "use formal policy analyses to buttress and elaborate those beliefs" (Sabatier & Jenkins-Smith, 1999, p. 123). Hence, even if crises are viewed as a major source of policy change, ACF scholars appear to be dismissive of the notion of "crisis exceptionalism," which suggests that crises provide opportunities for dramatic change in otherwise stable policy programs. Instead, it is posited that policymakers will behave rigidly in threatening situations in order to preserve the status quo (cf. Staw, Sandelands, & Dutton, 1981). In this process, dominant coalition members are predicted to respond to pressures for change by restricting change to secondary aspects, while keeping core beliefs intact (Jenkins-Smith & Sabatier, 1993, p. 43).

Strategic Action in the Pursuit of Self-Interest. According to one recurrent criticism of the ACF, coalition representatives should be expected to act not only to realize policy core beliefs but also to secure certain core self-interests (Schlager, 1995). In politics, key interests include, for instance, vote maximization, office seeking, policy seeking, representation, and party cohesion (e.g., Strom, 1990). This observation partly derives from the inherent logic of crisis events, which sometimes indicate a monumental failure of the policies and practices of dominant coalitions (Boin et al., 2005; Kuipers, 2004; Sabatier & Weible, 2007). In the face of an impending threat against existing policies, crisis management often goes hand-in-hand with political survival for dominant coalition members. A number of scholars (Hoberg, 1996; Nohrstedt, 2005; Parsons, 1995) have faulted the ACF for downplaying the role of interests in explaining policy change, but ACF authors continue to emphasize the subordinated role of interests (McBeth et al., 2007; Sabatier & Jenkins-Smith, 1999, p. 131).[5] This is unfortunate because research findings suggest interesting interconnections between strategic action and learning. The so-called "threat rigidity thesis" holds that crisis events reduce the probability of learning when policymakers (or other actors) believe that their core interests are being threatened. For instance, Boin and 't Hart (2003, p. 548) suggest that the politics of blaming, which dominate the aftermath of many crises, create an atmosphere where learning is encumbered. Barnett and Pratt (2000) take a different stance by suggesting that different types of threats will produce different outcomes. In their view, certain latent threats will be followed by flexibility effects engendering organizational learning.

Figure 1 summarizes the interdependencies between these variables. The figure is not an attempt to construct a deterministic model of post-crisis policymaking—rather, it seeks to isolate and clarify ACF's assumptions about crisis and policy outcomes. It also adds strategic action as a supplementary explanatory variable.

In brief, Figure 1 suggests that an event triggers minority coalition mobilization (e.g., by venue expansion, framing) and alters the distribution of political resources (e.g., public opinion) within the subsystem.[6] In effect, these developments escalate into a crisis (in accordance with the definition introduced above) that threatens the beliefs and interests of the dominant coalition, which responds by defending core

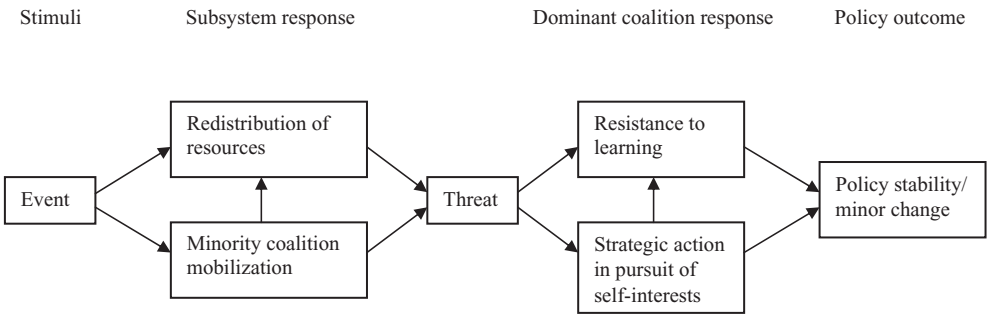

Figure 1. Diagram of Crisis Development and Policy Stability in Policy Subsystems.

beliefs and self-interests. The defensive approach leads to policy stability or some minor change at best.

Methods and Data

Policy studies are sometimes criticized for not paying enough attention to the causal mechanisms driving policy change (John, 2003; see also Steinberg, 2007). Along these lines, Mintrom and Vergari (1996, p. 422) argue that the ACF "does not direct our attention to exploring the processes that determine when policy change actually will take place." It is easy to accept the logic of this argument given ACF's explicit focus on long-term policy processes, which increases the number of actors involved and the structures and motivations that influence their behavior (Hendrick & Nachmias, 1992). This problem can be curbed, at least partially, through widening the traditional ACF methodology by combining different research methods and levels of analysis.

Data for the identification of coalitions in the Swedish nuclear energy policy subsystem have been obtained in three steps (see Nohrstedt, 2007). First, all organizations participating regularly (at least three occasions) in Swedish nuclear energy policymaking (Parliament committee hearings and by comments on government bills) were identified. Second, the testimonies of these participants (116 in total) were coded using a 48-item coding scheme based on the belief items identified by the ACF.[7] Three types of documents were used for this purpose (government bills, comments, and party motions) covering five main periods (1975, 1981, 1983, 1986, and 1987–89). Finally, additive belief scales were created on the basis of the items that were mentioned most frequently (in more than 10 percent of the testimonies). Principal component factor analysis (varimax rotation with eigenvalues ≥ 1) was employed for this purpose. Table 1 summarizes the scales and the underlying items.

Fuzzy cluster analysis is employed to identify coalitions within the Swedish nuclear energy policy subsystem. Fuzzy clustering generates membership scores (Euclidean distances) indicating how strongly an organization belongs to each cluster. High scores indicate central positions in any given cluster while low scores

Table 1. Scale Descriptions

Additive Belief Scales	Items Included
Policy core belief scales	
Nuclear energy threat and viability scale (Cronbach's $\alpha = 0.74$)	Nuclear power threat Reliability of risk assessment methods Viability of nuclear power
Alternative energy sources viability scale ($r = 0.54$**)	Viability of wind power Viability of bioenergy
Secondary aspect scales	
Scientific information quality scale ($r = 0.53$*)	Quality of scientific information Allocation of research funds for bioenergy
Nuclear energy phaseout planning scale ($r = 0.51$**)	Position on the nuclear phaseout timetable Position on energy system conversion plans

*indicates significance at 0.05 level, two-tailed test; **indicates significance at 0.01 level, two-tailed test.

indicate more peripheral positions. On the basis of high average membership scores in extreme clusters (nuclear energy viability and nuclear energy opposition clusters), patterns of coalition stability were analyzed resulting in two major stable clusters of organizations sharing similar policy core beliefs over time. Organizations labeled "unassociated" have either made inconsistent testimonies over time or were members in clusters other than the extreme clusters, primarily moderate/balancing clusters (for further details, see Zafonte & Sabatier, 2004). Table 2 summarizes coalition membership among frequently testifying organizations on policy core items.[8]

One analytical task in this study is to provide an account of coalition (minority and dominant) behavior in response to the Chernobyl accident. In this analysis, the coalition patterns identified in Table 2 provide the empirical base. Various additional sources, including written comments ("remiss" in Swedish), parliamentary records, internal documents from the Swedish Chernobyl inquiry, and secondary sources were analyzed to ascertain each organization's understanding of the accident as well as their arguments related to Swedish nuclear energy policy. Finally, recently publicized government documents (meeting records) and memoirs of former government officials provided sources for studying the internal government decision process. As a complement to these sources, an interview was conducted (by the author, November, 28, 2006) with former Minister of Energy, Birgitta Dahl.

Swedish Nuclear Energy Policymaking after Chernobyl

Throughout the 1960s, Social Democratic proposals for phasing in nuclear power received unanimous parliamentary approval. However, as antinuclear sentiments grew strong in the early 1970s, the nuclear power issue caused a major and drawn-out split in Swedish politics. As a consequence, the anti-nuclear Center Party succeeded in bringing about the first election in 44 years of a non-Social Democratic government in 1976. After the 1979 Three Mile Island accident, the Social Democrats called for a national referendum on nuclear power (see Nohrstedt, 2005). The result called for a doubling of the number of reactors within a long-term phaseout. A parliamentary decision set the phaseout date for 2010 on the assumption of a 25-year "technically safe lifespan" of the plants; thereafter, nuclear power became depoliticized. Returning to power again in 1982, the Social Democratic government proposed, just weeks before Chernobyl, that the first reactors be decommissioned toward the end of the 1990s (Swedish Parliament, 1986a).

Immediately after the Chernobyl accident, Swedish authorities and politicians were facing a series of unprecedented crisis decision problems. Initial challenges involved, for instance, identification of the source of contamination, determination of the seriousness of the situation, and clarification of the chain of command (Stern, 1999). Additionally, strong signs of popular distrust in the Swedish nuclear power production system and emergency response capability emerged. To many Swedes, Chernobyl represented a flagrant failure of risk evaluation and crisis preparedness (Nohrstedt, 1991). Eventually, as the acute crisis de-escalated, pressure for the immediate dismantling of Swedish reactors intensified at a rapid pace. In aggregate,

Table 2. Stable Belief Coalitions in Swedish Nuclear Energy Policy 1970–1991

Nuclear Energy Viability Coalition		Nuclear Energy Opposition Coalition		Unassociated Organizations/Dominant Coalition	
Defining characteristics (policy core beliefs) Threat posed by nuclear power is low, methods for risk assessment are reliable, nuclear power is a viable energy source, alternative energy sources are not viable within the near future		Defining characteristics (policy core beliefs) Threat posed by nuclear power is high, methods for risk assessment are unreliable, nuclear power is not a viable energy source, alternative energy sources are viable within the near future		Defining characteristics (policy core beliefs) Moderate views on the threat posed by nuclear power, methods for risk assessment, and viability of nuclear power and alternative energy sources or inconsistent testimonies over time	
Frequent Members	Average Membership Score	Frequent Members	Average Membership Score	Frequent Members	Cluster Membership
AB Atomenergi	0.70	Environmental Union	0.96	Social Democrats (ruling party in 1986)	Inconsistent
ASEA-ATOM	0.99	People's Campaign against Nuclear	0.67		
National Industrial Board	0.99	Power		Trade Union Confederation	Inconsistent
Energy Agency	0.94	Green party	0.67	Defence Research Agency	Inconsistent
Vattenfall	0.80	Left Party	0.56	Nuclear Power Inspectorate	Inconsistent
Association of Power Stations	0.26	Bioenergy association	0.37	National Board of Health and Welfare	Inconsistent
Central Operating Management	0.86	Center Party	0.50	Uppsala University	Moderate
Federation of Swedish Industries	0.78	Society for Nature Conservation	0.38	National Board of Planning	Moderate
Conservative Party	0.59	Association of Local Authorities	0.64	National Board of Forestry	Inconsistent
Radiation Protection Authority	0.59	Environmental Protection Agency	0.27	National Forest Enterprise	Inconsistent
Royal Academy of Sciences	0.58	Liberal Party	0.52	Swedish Society of HVAC Engineers	Inconsistent
Royal Academy of Engineering Sciences	0.53	Cellulose and Paper Association	0.36	National Board for Technical Dev.	Inconsistent
Association of Graduate Engineers	0.49				
County Board of Malmöhus	0.37				
County Board of Halland	0.59				
Conc. Board for Environmental Protection	0.66				
Swedish Power Association	0.77				
University of Agricultural Sciences	0.44				

this combination of operative and political challenges galvanized Swedish crisis managers and politicians to take action.

The Policy Response: Minor Change

Six months after Chernobyl, and following the conclusions of an official crisis inquiry conducted by the Energy Council (a standing government committee on energy policy) accompanied by an *ad hoc* group of nuclear power specialists, the Swedish government stated that a first reactor would be decommissioned in 1993–95 and a second in 1994–96, while the 2010 endpoint should remain (Swedish Parliament, 1987a). This proposal, however, was based on the condition that the government would return again in 1988 with more detailed suggestions on how to proceed with the phaseout. By definition, these changes were not substantial. In the ACF, major policy change requires "change in the policy core aspects of a governmental program" (Sabatier & Jenkins-Smith, 1999, p. 147). One such core aspect is the "overall seriousness of the problem" (p. 133). Thus, the fact that Chernobyl did not alter the prevailing risk assessment shows that government officials remained committed to their previous understanding of the nuclear power problem. Eventually, in 1988, government policymakers proposed that the first two reactors should be decommissioned in 1995 and 1996, respectively (Swedish Parliament, 1988), while declaring they would return again in 1990 to decide which reactors should be dismantled. However, by 1990, this decision was canceled on the basis of a political compromise, although the final date of 2010 was not altered (Carlsson, 1999, p. 282).

Minority Coalition Mobilization

Nuclear Energy Opposition Coalition. Members of the nuclear opposition coalition (organizations appearing in the center column in Table 2) were invited to participate in the crisis investigation commissioned to assess the consequences of Chernobyl and to also comment on the findings. Furthermore, at the time of the accident, some prominent coalition leaders had taken positions within the parliamentary machinery, although it is unclear how this affected nuclear energy policymaking. However, while gaining access to important policymaking venues, these organizations were also distanced from certain fora where the risks of nuclear power were discussed. One example was a series of workshops arranged by the crisis investigators, which primarily brought together organizations identified as members of the nuclear energy viability coalition.[9] But in aggregate, Chernobyl did not have any significant effect on the political resources available to the nuclear opposition coalition.

In terms of framing, nuclear power opponents argued that Chernobyl surpassed prevailing risk assessments and demonstrated the dangers of nuclear energy, which in turn justified the acceleration of the Swedish nuclear power phaseout. A key argument was that Chernobyl illustrated the risks with nuclear power even in Western democracies. "Socialist nuclear power is equally dangerous as capitalist nuclear power," as one Left Party communist argued in Parliament (1986b, p. 27,

author's translation). In the view of several anti-nuclear organizations, Swedish government officials and the crisis investigators substantially exaggerated technological dissimilarities between Swedish and Soviet reactors. For instance, the People's Campaign Against Nuclear Power criticized the government for overemphasizing differences between Soviet and Swedish reactors while ignoring basic similarities between these plants (Ministry of Environment and Energy, 1987). In addition, members of this coalition pointed to the role of human error, which, despite highly reliable reactor safety systems, presented a risk for nuclear power accidents in Sweden. Most anti-nuclear organizations called for acceleration of the Swedish nuclear power phaseout starting with an immediate shutdown of the Barsebäck plant. In their view, Barsebäck was particularly vulnerable because it was located in southern Sweden, close to several major Swedish cities as well as to the Danish capital Copenhagen. The majority of the Danish parliament wanted Barsebäck closed down. Anti-nuclear organizations also demanded that the government should quickly come up with a plan to dismantle the remaining plants.

Most organizations previously against nuclear power remained committed to this belief after Chernobyl. This picture is mixed, however. One group of organizations pointed to the risks with nuclear power and the necessity to immediately initiate the nuclear phaseout or, alternatively, to develop specific phaseout plans. However, other members of this coalition did not explicitly share these beliefs. Instead, these organizations discussed the implications of Chernobyl either from the perspective of narrow organizational agendas or by taking a more neutral stance. Nevertheless, in aggregate, there were no dramatic changes in beliefs expressed by the nuclear power opposition coalition.

Even if this coalition seemed incapable of launching a long-lasting offensive against nuclear power, developments in public opinion and media coverage indicated that the post-Chernobyl situation was still favorable for anti-nuclear sentiments. With respect to agenda-setting, it can be argued that the crisis investigation itself constituted a success for the nuclear energy opposition coalition by once again placing the nuclear power issue under the public spotlight. Furthermore, nuclear power opponents were less visible in the press compared to nuclear power supporters, but despite this pattern, the media image over time seemed to favor the nuclear power opponents. Compared to other issues (such as crisis preparedness and the radiation contamination problem), data suggest that the Swedish media eventually directed most attention toward problems related to nuclear power production (Westerståhl & Johansson, 1987). Public opinion developments were also favorable to nuclear power opponents as indicated by the fact that the accident increased public anxiety over nuclear power.[10]

Nuclear Energy Viability Coalition. Chernobyl did not add new political resources to the nuclear energy viability coalition (organizations appearing in the left-hand column in Table 2); the accident was rather a setback in terms of public opinion and news media attention. Polls indicated a significant drop in the popular support for nuclear power and the public offensive against the referendum result stopped short, as many nuclear power advocates temporarily withdrew from the public debate

(Anshelm, 2000; B. Dahl, interview, November 28, 2006). Moreover, to end the public offensive questioning the referendum result, the government presented a bill prohibiting all kinds of preparations to construct nuclear reactors (Swedish Parliament, 1987b). Nevertheless, members of the viability coalition eventually took action to defend the continued use of nuclear power. Several coalition members participated in the crisis investigation, which in fact was dominated by organizations that frequently supported nuclear power. These organizations produced a number of technical reports on which the crisis investigators based their conclusions regarding the risk assessment of Swedish nuclear power reactors as well as different phaseout alternatives. Other coalition members contributed to the investigation by providing various documents on their own initiative. All members of this coalition were invited to comment on the inquiry's findings.

As the anti-nuclear organizations sought to "dramatize" the Chernobyl accident, nuclear energy supporters attempted to expand the debate to alternative energy sources and shift focus to other, in their view, more pressing environmental problems. Members of this coalition maintained that there were indeed fundamental differences between the Chernobyl plant and Swedish reactors. Conservative members of Parliament (MPs) argued before Parliament that Swedish nuclear reactor safety systems significantly reduced the risk for accidents and that similar safety systems were lacking in the Soviet Union. To cite one Conservative MP: "Sweden is much better equipped than other countries in dealing with nuclear power" (Swedish Parliament, 1986b, p. 52, author's translation). Other members of this coalition saw enormous potential in new Swedish nuclear power technology. In their view, Chernobyl justified renewed attention to future nuclear power development projects which, according to one MP "could be the solution to the world's enormous energy problems" (Swedish Parliament, 1986b, p. 55, author's translation). In addition, viability coalition members played down the risks related to human error with reference to Swedish operators' high competence and advanced training (e.g., Swedish Parliament, 1987c, p. 3).

According to this coalition, Chernobyl justified a reassessment of risks related to transboundary radioactive contamination. In their view, Swedish authorities had underestimated the risk that Sweden could suffer serious consequences from nuclear power accidents abroad. For this reason, it would be more beneficial to contribute to nuclear power safety development in Eastern Europe instead of wasting resources on decommissioning Swedish reactors that met high safety standards (e.g., Anshelm, 2000; Swedish Parliament, 1986b, p. 52). All organizations in the nuclear viability coalition decisively rejected the conclusion that Chernobyl would justify changes in Sweden's nuclear power program. Some even objected to setting a final date for the nuclear phaseout pending continuous risk assessments (Ministry of Environment and Energy, 1987; Swedish Parliament, 1987c, p. 9), while other organizations proposed that the phaseout should be initiated as close to 2010 as possible (Ministry of Environment and Energy, 1987). These observations provide evidence that the nuclear energy viability coalition remained stable; all members remained committed to the belief that environmental, economic, and safety concerns justified continuous use of nuclear energy until at least 2010.

What appears to have been at least equally important to these organizations was the observation that other slow-burning environmental problems—particularly acidification, air pollution, and the thinning ozone layer—were becoming worse and posed far more serious problems compared to the risks associated with nuclear power. In their view, increasing the pace of the nuclear power phaseout would have required an increase in the use of coal, which in turn would have had negative effects on the air pollution problem. With no reliable alternative energy sources available to reduce the use of fossil fuels, nuclear power was seen as the only feasible option within a foreseeable future (Anshelm, 2000; Vedung & Klefbom, 2002).

Unassociated Organizations. The ACF assumes that unassociated organizations will appear but that these will either leave the subsystem or be absorbed by one of the other coalitions (Sabatier & Jenkins-Smith, 1999, p. 120). Thus, in theory, it is possible that previously "neutral" actors will join one of the coalitions and thereby tip the balance of power within the subsystem. Documents show that the majority of previously unassociated organizations (appearing in the right-hand column in Table 2) also remained non-aligned after Chernobyl. Based on the view that the Energy Council's conclusions were incomplete, several organizations concluded that it was not possible to form an opinion on the risk assessments and timing of the nuclear power phaseout. However, three organizations (the Trade Union Confederation, the Board for Technical Development, and the Nuclear Power Inspectorate) backed the view endorsed by the members of the nuclear energy viability coalition (Ministry of Environment & Energy, 1987). It is unclear if this affected the course of nuclear energy policymaking after Chernobyl. On the one hand, data show that these three organizations over time argued in favor of nuclear power but occasionally expressed negative or moderate views (see Nohrstedt, 2007). From this perspective, the fact that these organizations framed the consequences of Chernobyl in line with the nuclear energy viability coalition was probably not interpreted as a dramatic turnaround because they had occasionally endorsed these views in the past. On the other hand, the Trade Union Confederation and the Nuclear Power Inspectorate were quite influential actors in the nuclear energy policy domain. By supporting the Energy Council's findings, it is possible that these organizations helped in legitimizing the decision not to accelerate the nuclear power phaseout.

Learning within the Dominant Coalition

The ACF assumes that a crisis is unlikely to be followed by major policy change because dominant coalition members persistently defend their core beliefs. Contrary to these expectations, documents from the Swedish Chernobyl inquiry and internal government meetings indicate that the crisis investigation provided a relatively open forum conducive to policy-oriented learning. Minister of Energy Birgitta Dahl (interview, November 28, 2006) stressed that the investigators were commissioned to provide basic data as input for political decision making and would not be urged to take a definite position, partly to ensure their agencies'

integrity and maintain public trust. In her view, many previous energy policy investigations had been obstructed by irreconcilable positions and this was a mistake she wanted to avoid (Social Democratic Party, 1986, p. 12). On this basis, government officials explained that they were willing to introduce new nuclear energy policy guidelines if such were justified by the crisis commission's findings (Swedish Parliament, 1986b, p. 32).

Several agencies provided information to the inquiry, while political involvement was held to a minimum (B. Dahl, interview, November 28, 2006). The basic scientific work was carried out by five agencies: the Energy Agency, the Swedish Nuclear Power Inspectorate, the Radiation Protection Institute (recurring members of the nuclear energy viability coalition), the Swedish Environmental Protection Agency (recurring member of the nuclear energy opposition coalition), and the National Institute of Economic Research (unassociated). Other organizations representing the nuclear power industry and the nuclear energy opposition coalition contributed on their own initiative (Expert Group on Nuclear Safety and Environment, 1986–87). However, close reading of the documents suggests that the investigators focused primarily on the findings reported by the five agencies. Repeated meetings between Energy Council members and other external experts possibly encouraged a critical analysis. Judging by public reactions, the commission had a difficult time compromising between the various interests represented, and critics argued that the report gave prominence to the views promulgated by anti-nuclear groups (Anshelm, 2000, pp. 366–67). The veracity aside, it appears that the government and the investigators attempted to limit the potential influence of the nuclear industry. In addition, the experts assisting the Energy Council decided to restrain the inflow of information from the nuclear industry. These actions were consistent with the government's strong positioning against attempts to repeal the referendum decision to phase out nuclear power.

To summarize, this analysis confirms that government action was preceded by an effort to learn from a fairly open examination of alternative courses of action. Government officials remained open to the possibility that the findings of the inquiry could justify a decision to accelerate the nuclear phaseout, although they were aware that this option would be extremely costly (B. Dahl, interview, November 28, 2006). But the Swedish Chernobyl commission was not the only forum affecting Swedish nuclear energy policymaking. Based on the views presented by International Atomic Energy Agency (IAEA) specialists months before the Swedish commission report was published, government officials concluded that the causes of the Chernobyl disaster did not prompt rethinking the risks associated with Swedish nuclear power (B. Dahl, interview, November 28, 2006; see also IAEA, 1986). Hence, while the Swedish crisis commission provided a forum to evaluate the long-term consequences of Chernobyl, crucial insights were obtained from other professional fora as well. These findings are inconsistent with the ACF, which postulates that policymakers, in response to crises, more or less deliberately screen out alternatives challenging their policy core beliefs. In this case, dominant coalition representatives seemed willing to critically evaluate their beliefs on nuclear power, but the outcome of this learning process did not result in any substantive policy change.

Strategic Action within the Dominant Coalition

Despite the fact that Chernobyl did not change the risk assessment concerning Swedish nuclear power plants, the government decided to move forward the starting point of the phaseout from the late 1990s to the mid-1990s. This move was above all a symbolic counter-measure to resist public pressure to dramatically accelerate the nuclear power phaseout (B. Dahl, interview, November 28, 2006). After Chernobyl, government officials were confident that public support for the party and its nuclear energy policy had not been negatively affected by the accident and the way it was handled but realized that the situation was extremely volatile and that even a minor slip could quickly turn the tide of public opinion (Social Democratic Party, 1986, p. 6). It is likely that the 1976 electoral defeat played a role, as indicated by the fact that party leadership was generally disinclined to change position on the nuclear energy issue after the 1976 regime shift (B. Dahl, interview, November 28, 2006). However, there are no indications that the perceived risk of losing popular support constrained the crisis investigation; on the contrary, the party leadership predicted that pursuing the inquiry could serve to restore public credibility (Social Democratic Party, 1986, p. 14). As investigation chairman, Dahl believed the inquiry could help in containing the situation and maintaining control of the nuclear power issue at a time when it was subject to intense reform pressure (B. Dahl, interview, November 28, 2006). But other considerations were at play as well. As Minister of Energy, Dahl had established a threefold goal to phase out nuclear power while preserving unexploited rivers and reducing climate change. Based on previous experience, Dahl was convinced that clear and time-bound goals should guide the phaseout. In addition, the financial costs of a rapid acceleration and the ambition to maintain good relations with the environmental movement were other motivations that added to the explanation (B. Dahl, interview, November 28, 2006).

Chernobyl also offered a window of opportunity for the Social Democrats to reach political gains. Party leaders believed that growing tensions between the political blocs would obstruct their policies, but they realized gradually that Chernobyl could offer an opening to initiate a broad energy policy compromise (Social Democratic Party, 1986, p. 5). They thereby saw an opportunity to permanently terminate the nuclear power controversy, which would also bolster the popular image of the party. The objective was to seek broad political support for long-term energy policies that would realize the threefold goal of phasing out nuclear power while preserving unexploited rivers and reducing climate change (B. Dahl, interview, November 28, 2006). The government also hoped that the compromise would end the destructive energy policy debate, which in their view blocked a holistic approach to energy policy thinking (B. Dahl, interview, November 28, 2006). Another important objective was to nourish an image of the party as trustworthy and efficient (Social Democratic Party, 1986, p. 13). The need for strong political leadership was also conditioned by other destabilizing political events, including the assassination of Prime Minister Olof Palme in February 1986, American air strikes on Libya, and difficult wage negotiations, which together created an atmosphere that required firm political leadership (Social Democratic Party, 1986, p. 5).

These actions were also accompanied by growing environmental concerns among the public and within the Social Democratic party organization. By the mid 1980s, polls showed that environmental policy was a top-priority issue for the Swedish public. With a number of Social Democratic side-organizations seeking to approach the environmental movement, and the new Green Party threatening to lure away Social Democratic voters before the 1988 election, it was crucial for party leaders to demonstrate that they took these issues seriously (Bennulf, 1995). From this perspective, reaching a broad energy policy compromise that integrated environmental values would help prevent the escalation of intra-party conflict, and would attract "green" voters in the 1988 election.

The evidence presented above suggests that the political dimension of post-crisis episodes might reveal important clues for the understanding of crisis-induced outcomes. In this case, the public questioning of the Swedish crisis management system and long-term nuclear energy policies underlined the necessity of a forceful and credible public relations response to the Chernobyl disaster. Hence, one top priority for the government was to nourish a public image of itself as being both trustworthy and efficient. Most evidence indicate that the long-term objective was to eliminate the risk for another electoral defeat due to poor political handling of the nuclear power issue.

Discussion

ACF theory assumes that external shocks will not have any significant effects on policy programs unless they are skillfully exploited by minority coalitions seeking change. This appears to be a reasonable claim. After Chernobyl, Swedish nuclear power opponents and supporters attempted to use the accident to advance their policy aims but, overall, these efforts did not alter the distribution of power within this policy subsystem. Despite the magnitude and impact of the Chernobyl disaster, preexisting beliefs about Swedish nuclear power safety and long-term energy predictions prevailed. Neither did the accident pave the way for new and influential actors to enter the policymaking process. Nevertheless, mobilization of pro-change forces resulted in some minor, although essentially symbolic, policy outcomes as manifested by the decision to specify the nuclear power phaseout timeline and the government bill prohibiting preparations for new reactor construction. However, the fact that the government did not instigate any major substantive changes provides tentative support for the assumption that changes in problem definition and policy venue access are important prerequisites for major policy change. At the least, this analysis shows that policy stability can prevail when these conditions are absent.

This case study also casts doubt on theoretical predictions. The ACF holds minority coalition mobilization as a necessary cause for major policy change. Evidence presented in this case study shows that the Swedish government—despite no dramatic changes in the balance of power within the nuclear energy subsystem—was determined to reconsider its nuclear energy policies. In this case, minority coalition mobilization was subordinated to political considerations in explaining the outcome of the post-crisis policymaking process. Swedish government representa-

tives had political motives to launch a thorough and independent crisis investigation by predicting that this measure would strengthen the public's image of the party and help prevent renewed politicization of the nuclear power issue. At the same time, the analysis has shown that the government intended to let the findings guide subsequent decisions about the future status of Sweden's nuclear power program. These actions are inconsistent with the ACF prediction that rigid beliefs screen out new policy alternatives; they also corroborate previous criticism against the ACF that it is problematic to exclude self-interests as a motive for policy choice.

In this case, it has been shown that the activities of pro-change minority groups essentially contributed to deepen the sense of crisis resulting in minor symbolic change. This observation turns attention to the notion of "skillful exploitation." One weakness in the ACF is that it does not explain in detail how minority coalitions go about exploiting crises in their attempts to alter public policies or what it takes for such attempts to be successful. In fact, policy studies in general have not yet provided a clear-cut explanation of how coalition leaders (or other policy entrepreneurs) take advantage of "windows of opportunity" to advance their policy aims (Goldfinch & 't Hart, 2003). Therefore, one avenue for future ACF research might be to explore the conditions for successful crisis exploitation (cf. Boin, McConnell & 't Hart, 2008). Advocacy coalitions may well remain the analytical hub, but new insights will be gained by analyzing how minority coalition behavior actually affects dominant coalitions and under what conditions mobilization efforts might have an impact on policy choice.

When pursuing this track, it would be futile to impose a single explanation for policy choice (Schlager, 1995). Besides the role of learning and strategic action, this case study also sheds light on the role of cognitive heuristics in achieving pragmatic policy outcomes. For instance, in setting up the crisis investigation and specifying its objectives, government representatives relied upon previous experience from an earlier investigation launched after the TMI crisis. Similarly, the decision to specify the phaseout timeline was guided by experience from other policy programs. Consequently, when evaluating the explanatory utility of different logics of political decision-making, analogies, routines, and other heuristics as a means of reaching solutions to complex policy problems should not be omitted (Brändström, Bynander, & 't Hart, 2004; Khong, 1992; Scharkansky, 1970). Such influences might not be decisive but can nevertheless add to the understanding of crisis-induced policy outcomes.[11]

Conclusion

Drawing on a case study of Swedish nuclear energy policymaking after the 1986 Chernobyl disaster, this analysis has explored theoretical predictions about crisis-induced policy outcomes offered by the ACF. Empirical findings cast doubt over some of these predictions—including the presumed rigidity of policy core beliefs and the limited role of self-interests—but the study still demonstrates that the ACF presents a useful framework of analysis to explain crisis-induced policy outcomes. Although it is not a theory explicitly on post-crisis policymaking, the ACF serves as

a guide to important explanatory factors, and testing the utility of these factors clearly adds to the understanding of the role of crisis events in policymaking.

The results of this study also contribute to further development of the ACF. Generally, one role for single case studies in theory development is to identify generalizations of the conditions explaining why particular causal paths occur (George & Bennett, 2005, p. 112). Anomalous or deviant cases where predicted outcomes do not occur are particularly useful because they can serve to locate previously unidentified explanatory variables (Emigh, 1997). On this basis, this analysis highlights three sector-specific variables that might be important in explaining post-crisis policy outcomes. First is the "ideological salience" of an issue to the dominant coalition. Ideological saliency (in terms of an issue's perceived centrality to party ideology and electoral performance) might help in explaining why certain beliefs are more rigidly held than others and why dominant coalitions might be less receptive to reform pressure. Second, dominant coalitions are likely to be affected by the "level of conflict" within a subsystem. Crises with implications for issue areas characterized by high levels of conflict (in terms of high degree of incompatibility of basic beliefs of competing coalitions) are likely to pose a more direct threat against the core beliefs of the dominant coalition, which will have few incentives to modify its core beliefs. In these situations, it will be easier for the dominant coalition to opt for middle-way solutions so as to avoid arousing or escalating uncontrollable value conflicts (Stewart, 2006). High levels of belief system incompatibility has already been emphasized by the ACF as an important obstacle to policy learning (Jenkins-Smith & Sabatier, 1993, p. 49), and this analysis suggests that it might deserve a more prominent explanatory role. The third factor that appears to be important is the "occurrence of previous crisis experiences" within the same policy domain. If a policy subsystem has been exposed to crises in the past, the likelihood increases that the dominant coalition will be able to predict how minority coalitions will respond when a new crisis hits (cf. Birkland, 2006). Representatives of the dominant coalition can therefore be expected to act proactively and adapt their political crisis response accordingly to defend and consolidate preexisting policy core beliefs. Future research will be needed to provide a sense of whether these factors can be helpful in explaining crisis-induced policy outcomes in other cases and political contexts.

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Notes

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1. Inspired by the focusing event literature, Sabatier and Weible (2007, pp. 204–205) recently introduced "internal shocks" as an alternative path to major policy change. In contrast to external shocks, which are largely outside the control of subsystem actors, internal shocks are by definition affected by

subsystem actors. For a critique of the external–internal distinction, see Parsons (1995, p. 201) and Nohrstedt (2007, pp. 36–37).

2. The ACF separates policy core beliefs (defined as "basic normative commitments and causal perceptions across an entire policy domain or subsystem") from secondary aspects (which refer to "beliefs concerning the seriousness of the problem or the relative importance of various causal factors in specific locales, policy preferences regarding desirable regulations or budgetary allocations, the design of specific institutions, and the evaluations of various actors' performance"). See Sabatier and Jenkins-Smith (1999, pp. 121–22).
3. This limitation stems from two of ACF's basic premises: that a time perspective of at least a decade or more is required to understand the process of policy change, and that the policy subsystem is the most useful unit of analysis (see Sabatier & Jenkins-Smith, 1999, pp. 118–19). Development of the policy entrepreneurship model has brought in a focus on the role of individuals in the policy process but has only partly managed to fill this gap. By definition, policy entrepreneurs operate in opposition to existing policies by supporting innovative solutions. To promote these ideas, entrepreneurs use several activities, among them building coalitions (Mintrom & Vergari, 1996). Thus, while the policy entrepreneurship model underlines the importance of minority coalition mobilization, this model too overlooks the role played by incumbent leaders (i.e., representatives of dominant coalitions).
4. In Sweden, for instance, government representatives can decide on the initiation of crisis investigations, the direction of the investigations, the gathering of comments on the findings by various organizations (the so-called "re*miss*"), and the final interpretation of the findings and the comments.
5. In the most recent version of the ACF, Sabatier and Weible (2007, p. 209) take a less rigid stance by defining the relative weight of self-interests as one unexplored question that deserves to be "pursued in the next wave of ACF analyses."
6. This diagram excludes the possibility of the replacement of the dominant coalition since this is a rather infrequent scenario (see Sabatier & Jenkins-Smith, 1999, p. 148).
7. The coding scheme included seven categories of policy core items: risk and resiliency, causality and orientation on basic value commitments, reliability of energy consumption models, conditions for government intervention, proper distribution of government authority, viability of different energy sources, and proper distribution of public control. On secondary aspects, four main categories were included: allocation of research funding, approach toward the 2010 nuclear phaseout program, position on the 1984 atomic act, and method of financing nuclear energy production net costs (see Nohrstedt, 2007).
8. This analysis lacks data on coordination between organizations espousing similar beliefs. Hence, the clusters are more appropriately labeled "belief coalitions" (a term borrowed from Zafonte & Sabatier, 2004) instead of "advocacy coalitions." However, Weible and Sabatier (2005) find that actors with similar belief systems do tend to coordinate their behavior in some ways. On this basis, qualitative evidence provided by Nohrstedt (2007, pp. 87–89) illustrates some patterns of coordinated behavior among organizations within each cluster.
9. At this point, however, the government had already arrived at a risk assessment. Following a briefing by IAEA during the summer of 1986, they reached the conclusion that Chernobyl did not alter the risk assessment regarding Swedish nuclear power stations (B. Dahl, interview, November 28, 2006).
10. On public opinion, data presented by Holmberg (1988) show that the share of respondents greatly or moderately worried over nuclear power increased from 25 percent before the accident (April 1986) to 47 percent after Chernobyl (May 1986). Within the same period, the share of respondents with negative attitudes toward the decision to invest in nuclear power also increased from 26 to 35 percent. The same pattern can be observed in polls related to the nuclear phaseout schedule. Regarding continued production of nuclear power after 2010, 32 percent answered by August/September 1985 that this was a decent proposal while 48 percent answered this was a bad proposal. One year later, in October/November 1986, 23 percent answered that this proposal was decent while 57 percent answered that it was a bad proposal.
11. This observation is consistent with the basic assumptions of the ACF. Drawing on the work of Herbert Simon, Sabatier and Jenkins-Smith (1999, p. 131) depart from the assumption that actors are limited by various cognitive biases and constraints and can therefore be expected to rely on a variety of heuristics.

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