



The Advocacy Coalition Framework

Edited by
Hank C. Jenkins-Smith ·
Christopher M. Weible

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The Advocacy Coalition Framework

“Who better than Hank Jenkins Smith and Christopher Weible to take stock of the amazing growth and the still growing potential of the Advocacy Coalition Framework? This volume combines the editors’ decades of experience with the ACF with the best of current scholarship to assess the next chapter in the development of this crucial framework. This volume is essential reading for all policy scholars, and will be of particular value to researchers seeking to apply and refine the ACF in their work.”

—Thomas Birkland, *North Carolina State University, USA*

“And just when you thought you knew all there is to know about ACF, *The Advocacy Coalition Framework* comes along. It offers rich insights in the back-story of ACF; it also encourages coloring outside the textbook ACF box. This volume is a pleasurable must-read for all students of public policy.”

—Evangelia Petridou, *Mid Sweden University, Sweden, and NTNU
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“The book leverages Elinor Ostrom’s concept of framework to advance the development of the ACF and its associated theories. The volume represents a significant breakthrough, providing scholars with new conceptual tools and empirical cases to further expand our knowledge of policy making processes in a variety of contexts.”

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“This landmark volume masterfully weaves the foundational tenets of The Advocacy Coalition Framework with groundbreaking theoretical and empirical advancements. It offers a rich, nuanced exploration of policy dynamics, illuminating the intricate interplay of coalitions, learning, and change across diverse contexts. A definitive and indispensable work for scholars and practitioners seeking to push the boundaries of policy process research!”

—Geoboo Song, *University of Arkansas, USA*

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For Paul A. Sabatier

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The Advocacy Coalition Framework: Origins, Theories, and the Textbook Version

Hank C. Jenkins-Smith and Christopher M. Weible

Scholars and practitioners who seek to understand collective decision-making and governance utilize frameworks and theories to identify what matters (and does not) in shaping public policy creation, implementation, and revision. Useful frameworks and theories will attempt to identify the primary elements of the policy-making process and characterize the critical interactions among them. The Advocacy Coalition Framework (ACF) was developed for that purpose. In the four decades since its first articulation in the early 1980s, the Framework has been widely applied, criticized, and revised in cases across the globe. This chapter briefly recounts that development and evolution, highlighting key milestones and adaptations that have shaped its current form. We present the three main theories embedded in the Framework and offer a characterization of the “textbook” version of the ACF that one is likely to encounter in overviews,

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applications, and courses on theories of the policy process. We then provide an overview of this volume's empirical chapters, highlighting a cross-section of the most exciting new scholarly developments within and outside this textbook version.

ORIGIN AND EVOLUTION OF THE ACF

The ACF was initially developed by Paul Sabatier and Hank Jenkins-Smith in the 1980s to better understand policy processes as they play out over a decade or more. Both were engaged in research on key aspects of the policy process that were not well explained by then-existing theories. Sabatier had previously been engaged in a long-term project to clarify policy implementation by bridging the “top-down” and “bottom-up” approaches. The former focuses on legislation and formal institutions, while the latter emphasizes the roles of street-level bureaucrats, non-governmental actors, and informal relationships. He concluded that both approaches were integral and must be combined to make sense of policy-making and implementation. As a policy analyst in the U.S. Department of Energy, Jenkins-Smith was fascinated by the various pathways by which technical knowledge and policy analysis could influence policy formulation, implementation, and revision over time. His experience and research clarified that the roles of technical information and its purveyors were contingent on why, for whom, and in what institutional setting (venue) the information was mobilized. Questions of what was “learned” from information could not be separated from the larger processes by which public policy is conceived, implemented, and revised.

These themes resonated, stimulating Sabatier and Jenkins-Smith's long-term collaboration and friendship. They developed the ACF over the course of numerous conference papers, journal articles, and a co-edited journal symposium issue in *Policy Sciences* (Sabatier & Jenkins-Smith, 1988) with five applications based in the United States. The Framework was fully articulated in the 1993 book *Policy Change and Learning: An Advocacy Coalition Approach* (Sabatier & Jenkins-Smith, 1993). That volume provided a theoretical overview, updates from rising policy scholars, empirical applications (all based in the United States except one Canadian application by Mawhinney [1993]), and an assessment of the Framework's ongoing revisions for theoretical advancement and real-world policy applications.

After Sabatier and Jenkins-Smith (1993), the ACF was applied, tested, and revised through a steadily broadening collaboration among scholars across the globe. While most of the applications in the 1990s came from scholars in the United States (e.g., Ellison, 1998; Olson et al., 1999; Zafonte & Sabatier, 1998), the ACF increasingly attracted the attention of scholars outside the United States, including Canada (Lertzman et al., 1996), Switzerland (Kübler, 1999), Japan (Sato, 1999), the United Kingdom (Jordan & Greenway, 1998), the Netherlands and Germany (Eberg, 1997), and Italy (Radaelli, 1998).

To broaden ACF's appeal beyond the United States, Sabatier (1998) began elaborating on the contextual parameters posited by the ACF, which eventually became the Framework's coalition opportunity structures. Much of Sabatier's (1998) argument and revisions were folded into the chapter (Sabatier & Jenkins-Smith, 1999) in the First Edition of the *Theories of the Policy Process* (Sabatier, 1999). Additional 1999 revisions included changes to the model of the individual, policy subsystems, coalitions, and significant policy change.

Chris Weible entered the scene as a doctoral student with Paul Sabatier in 2000 and started publishing with him in the mid-2000s (Weible & Sabatier, 2006; Weible et al., 2004). Over this time, Sabatier and Weible further expanded the explanations of policy change and provided a foundation for international comparative studies, as found in the Second Edition of the *Theories of the Policy Process* (Sabatier, 2007; Sabatier & Weible, 2007). This decade also witnessed continuing theoretical and methodological advancements, particularly in building on Zafonte and Sabatier's (1998) use of network analysis to understand coalitions (Weible, 2005). By the late 2000s, a review of the ACF identified 80 applications with increasing globalization (Weible et al., 2009), particularly in Europe (e.g., Ingold, 2007; Nohrstedt, 2005).

Jenkins-Smith and Weible began their collaboration in the late 2000s, aiming to stabilize the Framework in response to relatively rapid changes in its concepts, flow diagrams, and ideas over the past decade. They sought to incorporate a framework-theory distinction to clarify the ACF's internal infrastructure and expand the base of ACF scholars, particularly those outside the United States.

These efforts first appeared in a special issue in the *Policy Studies Journal* (Weible et al., 2011) that drew on Sabatier's last ACF workshop in the fall of 2010 in Davis, California. This special issue featured a balance of applications in Canada (Montpetit, 2011), the United States

(Henry, 2011), Israel (Pierce, 2011), Hungary (Albright, 2011), Sweden (Matti & Sandström, 2011; Nohrstedt, 2011), and Switzerland (Ingold, 2011) and emphasized that the ACF is a “framework” supporting theories of policy change, learning, and advocacy coalitions.

Since the early 2010s, the Framework has increasingly been applied across the globe (Pierce et al., 2017), with a growing number of applications and empirical reviews conducted for countries in Europe (Nohrstedt & Olofsson, 2016), Asia (Jang et al., 2016; Li & Weible, 2021), and Africa (Osei-Kojo et al., 2022). Additionally, reviews on policy topics have documented its contributions (and limitations) to forest policy (Sotirov & Memmler, 2012) and climate change (Gabehart et al., 2022). Its reach beyond Western European and North American countries was explored in a special issue in *the Journal of Comparative Policy Analysis* (Henry et al., 2014) with applications in China (Han et al., 2014), the Philippines (Montefrio, 2014), India (Gupta, 2014), and Kenya (Kingiri, 2014). In perhaps its strongest comparative analyses to date, an edited volume analyzed coalition structures in oil and gas development across seven North American and Western European countries (Weible et al., 2016). While no one has counted ACF applications across different languages, we estimate the total number to be near 1000.

More important than the count of published applications is what has been learned. Since 2011, updates of the ACF can be found in the Third, Fourth, and Fifth Editions of the *Theories of the Policy Process* with Jenkins-Smith et al. (2014, 2018), and Nohrstedt et al. (2023). With the continued desire to stabilize the Framework and focus on improving lucidity and research quality, these subsequent revisions clarified the internal workings of the ACF and sought to summarize the knowledge gained and identify where knowledge remained underdeveloped. Finally, one of the apparent limitations of the ACF—and most policy process theories—has been insufficient attention to methods, a problem Weible and Samuel Workman began to correct with *Methods of the Policy Process* (2022), with Adam Henry (Henry et al., 2022) leading the first focused ACF chapter on its methods since Jenkins-Smith and Sabatier (1993).

MOTIVATIONS FOR ACF SCHOLARSHIP

Sabatier created the initial version of the ACF and presented it in June of 1983 in a workshop at the University of Bielefeld in the German Federal Republic after a yearlong stay. As mentioned above, Sabatier sought to overcome the limitations of his top-down approach to implementation, co-developed with Dan Mazmanian in the late 1970s (Sabatier & Mazmanian, 1979; Sabatier, 2005) and the bottom-up approaches to implementation developed by European scholars (Hjern et al., 1978). Instead, Sabatier argued that policy processes involve the evolution of public policies through ongoing adjustments and modifications, driven (in part) by learning among actors who are competing for different paths and trajectories within a broader environment. This dynamic interplay of learning and policy change among competing groups has been and continues to be a central theme of the ACF.

Jenkins-Smith first encountered Sabatier in the fall of 1983, when they bonded over their mutual dissatisfaction with prevailing approaches to studying public policy in the 1980s and early 1990s. These approaches, often referred to as the policy cycle or stages heuristic, were championed by scholars like Jones (1970), Anderson (1975), and Brewer and deLeon (1983). Drawing partly from Easton's (1965) systems architecture and Lasswell's decision functions (Lasswell, 1956), this heuristic portrayed the policy process as a series of sequential stages, from input and formulation to implementation, outputs, outcomes, and feedback. While initially valuable for integrating diverse institutional and governmental levels, this approach fell short in advancing scholarship. It lacked mechanisms to identify causal drivers in the policy process, overlooked bottom-up influences, and failed to effectively incorporate the roles of science, analysis, and expertise. Moreover, its linear depiction did not reflect the non-linear reality of policy development. Jenkins-Smith and Sabatier recognized these limitations, prompting a shift toward a more nuanced and comprehensive analytical framework.

While Sabatier and Jenkins-Smith diverged from the traditional stages heuristic by emphasizing continuous interactions and potential for learning, they also grappled with the challenge of navigating the intricate landscape of policy processes. This complexity stemmed from the involvement of diverse and competing actors across multiple organizations and institutional positions operating within and across disparate policy venues.

To reduce and manage this complexity, they focused on policy sub-communities—those actors who regularly seek to influence policies related to specific problem domains within a defined geographic region. The members of these sub-communities were identified through their regular participation in collective action settings like legislative and regulatory hearings, court cases, and professional conferences. In high-conflict situations, these sub-communities coalesced into opposing forces—termed “advocacy coalitions”—polarized by their competing belief systems and policy preferences.

Additionally, Sabatier and Jenkins-Smith aimed to be clear about their assumptions and hypotheses and to employ transparent and replicable methods to assess the validity of the ACF’s claims about the policy process. They readily acknowledged the Framework’s early imperfections and expected modifications and improvements to emerge as policy scholars addressed theoretical and empirical challenges. Consistent with Ted Lowi’s mantra that “clarity begets clarity, mush begets mush,” they sought to understand better which aspects of the ACF were well-verified, refuted, or required further investigation.

A final motivation stemmed from the complexity posed by the study of policy processes and the fundamentally collaborative (and decentralized) nature of the scholarship necessary to address it. Sabatier and Jenkins-Smith hoped that the ACF would serve as a flexible yet enduring framework for the community of scholars focusing on public policy processes. As with any framework, the ACF consists of sets of assumptions, question domains, and concept categories interconnected within it. Its primary value is facilitating interdisciplinary communication across policy domains and geographical regions, serving as a common language for scholars. Like Lakatos’s (1970) concept of the “hard core” of a research program, the fundamental principles of the Framework were expected to remain reasonably stable over time. Its role is to guide descriptive and explanatory inquiries to enable the accumulation of empirical evidence and conceptual advance in the more specific theories within the framework.

One often overlooked implication is that, within a given study, a comprehensive empirical test of all concepts and interactions within the ACF is both rare and unnecessary. Instead, the Framework allows for narrowing the focus on developing and testing theories, emphasizing a manageable set of questions, variables, and interactions (Ostrom, 2009). Theories—such as those focused on coalitions, learning, or

policy change—offer more precise conceptual and operational definitions, enabling the formulation of falsifiable propositions. Like Lakatos’s “protective belt,” these theories are subject to experimentation, adjustment, and modifications over time (Lakatos, 1970). Thus, given the remarkable complexity of the policy process, the Framework intends to allow for greater focus and specificity within particular studies that would contribute to a more general understanding of the policy process.

THE ASSUMPTIONS OF THE ACF

Assumptions within a framework serve as the building blocks for developing theoretical arguments and guiding empirical research. These assumptions help generate research questions, define the preferred contexts or domains where the framework is most effectively applied, and even suggest appropriate methods for conducting research and applying the framework. As such, assumptions contribute to what might be considered the “hardcore” foundation of a framework—elements intended to remain stable and provide consistency over time.

However, these assumptions are susceptible to scrutiny and revisions. Indeed, there are instances when it becomes necessary to challenge these foundational elements to assess their purpose, utility, and comprehensiveness. Such critical examination can lead to refinements, ensuring the continued relevance and robustness of the framework. The ACF’s basic assumptions are presented below.

Policy Subsystem as the Primary Unit of Analysis

For the ACF, the primary locus of collective action is within the policy subsystem, which serves as the most common unit of analysis across ACF studies. The boundaries of policy subsystems are defined by interactions concerning a substantive policy topic within a territorial scope among the network of actors who directly or indirectly seek to influence collective decision-making (McGee & Jones, 2019).

Drawing upon earlier notions of sub-governments, iron triangles, and issue networks (Heclo, 1978), the concept of subsystems recognizes that the range of players is broad, the array of institutional settings in which policy interactions take place can be quite complex, and explaining the dynamics of subsystem interactions requires attending to the substantive issue domain on which policy is focused (air pollution, education

policy, nuclear waste management, etc.). Given that complexity, the ACF identifies the critical elements of subsystems and describes how they are related.

The actors within policy subsystems focus a significant fraction of their efforts on the coalition opportunity structures, which consist of an array of formal and informal venues in which consequential decisions are made about policy issues. These venues—such as legislative committees, courts, regulatory agencies and boards, and other decision-making settings at multiple levels of government—provide the arenas for which policy actors organize and in which they seek to affect policies. In turn, coalition opportunity structures also affect the beliefs and behaviors of policy actors by affording or restricting access to decision-making. While this system of venues is termed “coalition opportunity structures,” it could equally be termed “coalition constraint structures.” Given their critical role in influencing subsystem characteristics and societal outcomes, coalition opportunity structures become a central focus of subsystem players, who are as likely to concentrate on shoring up or modifying the characteristics of these venues as they are on the policies they produce.

Within the broader macro system, the dynamics of a policy subsystem will generally be “semi-autonomous” in that actors seek resources, organize, and engage with other subsystem actors without substantial interference from outside the subsystem. However, subsystems typically overlap with and nest within larger subsystems and a macro system, leading to shifts of resources, incursions of new players, and other disturbances to the subsystem (Jones & Jenkins-Smith, 2009). For example, an electric energy policy subsystem in a specific state can overlap with that state’s environmental air quality subsystem, and both may be subsumed by national energy and environmental subsystems that jointly grapple with problems resulting from a changing climate.

Policy Actors as Primary Agents

A major assumption in the ACF is that only people have agency; they are empowered to choose, act, and possibly bring about change. The emphasis is on policy actors (or just actors) who regularly seek to influence decision-making and shape the outcomes of a policy subsystem. Examples of policy actors include, but should not be limited to, elected legislators and agency officials, non-government organization representatives, political party members, trade and business representatives, substantive

experts, members of the press who specialize in the substantive domain, community organizers, and “influencers” in social media. By virtue of their office and the resources at their disposal, a subset of these actors will have the authority to enforce and monitor legislative or legal processes.

Policy actors are considered boundedly rational, meaning they are instrumentally motivated by goals but have limited cognitive abilities to select, process, and recall stimuli, such as information and experience (Argyris & Schon, 1978; Festinger, 1957; Jones, 2001; Simon, 1957; Tversky & Kahneman, 1989). Due to these limited cognitive abilities, individuals simplify the world through the lenses of their belief systems and are prone to motivated reasoning and biased assimilation of stimuli (Kunda, 1990; Lord & Taylor, 2009).

People act based on simplified representations of the policy-relevant world—here called belief systems (Hurwitz & Peffley, 1987; Lakatos, 1970; Peffley & Hurwitz, 1985; Putnam, 1976). Belief systems are presumed to have a three-tiered structure: deep core, policy core, and secondary beliefs. *Deep core beliefs* encompass fundamentally normative values and ontological axioms applicable across multiple policy subsystems. *Policy core beliefs*, which have jurisdictional and substantive components, can be normative or empirical. Normatively, they reflect basic orientation and value priorities (e.g., reliance on governmental interventions or private markets) within the policy subsystem. Empirically, policy core beliefs include assessments of problem seriousness, causes, and preferred solutions. *Secondary beliefs* focus on a subset of the policy subsystem or the specific means (or instruments) for achieving desired outcomes outlined in the policy core beliefs.

Advocacy Coalitions as the Principal Aggregation of Policy Actors

From macro systems to policy subsystems and decision-making venues, policy actors encounter significant challenges, including the complexity of collective action, crowded policymaking agendas, limited attention of the public, political inequities, and opposition. They also rarely possess sufficient resources to influence policy on their own. To achieve influence in this environment, the underlying strategy is to team up and coordinate with others in advocacy coalitions, particularly with those who have relevant resources and share similar belief systems, with a strong focus on policy core beliefs.

As actors organize into opposing coalitions based on divergent belief systems, the dynamics of coalition behavior both shape and are shaped by the nature of the inter-coalitional conflict. During ongoing struggles against their opponents, they tend to remember losses more vividly than gains. This selective memory, combined with the interpretive lens of their belief systems, creates what ACF scholars have dubbed the “devil shift.” The devil shift is a phenomenon where actors distort the power and maliciousness of their opponents and their ideas, exaggerating the threat they pose (Sabatier et al., 1987). This psychological mechanism is crucial for enabling policy actors to overcome the challenges of collective action to form unified and enduring advocacy coalitions. Conversely, the “angel shift” occurs when actors exaggerate the virtue and power of allies, serving as another mechanism for overcoming collective action within coalitions (Leach & Sabatier, 2005).

Policies as Translations of Belief Systems

Policies (and programs) within subsystems reflect the translated beliefs of one or more coalitions. Rather than viewing public policies solely as political maneuvering among coalitions, policies represent aspects of competing “causal theories” mobilized to achieve normative ends (Pressman & Wildavsky, 1973). These causal theories describe the reasoning behind efforts to achieve specific policy outputs and outcomes and can be implicit or explicit in policy content. Thus, policies should be interpreted not just as government actions but also as the outcome of coalition efforts to map their belief systems into concrete policies. This reflection of belief systems in policies explains why coalition actors are persistent in their advocacy over time and why they focus and coordinate advocacy to narrow the gap between their beliefs and authoritative public policy.

Scientific and Technical Information as Key to Political Debates

Policy-relevant scientific and technical information can play a key role in understanding subsystem dynamics and in debates and arguments about public policy. Moreover, belief systems can be informed by scientific and technical explanations that point to causal interactions, problem attributes, and potential policy alternatives. Alternatively, scientific and technical information can threaten belief systems, requiring the coalitions

that subscribe to those beliefs to expend resources denying, challenging, or reinterpreting that information. Understanding policy processes, therefore, requires examining how scientific and technical information is integrated or deflected within belief systems, utilized in political debates and negotiations, and combined with other forms of knowledge.

Time as Integral for Understanding Policy Processes

The ACF presumes that a full characterization of policy processes requires a time frame of sufficient length to encapsulate multiple iterations of actor engagement, usually pegged at a decade or more. Time is necessary for actors to fully engage—to synthesize information, develop and implement strategies, coordinate with other actors, generate resources, and deploy them across available decision-making venues. Understanding the systematic processes involved requires multiple iterations of initiatives and responses by policy actors within policy subsystems.

For that reason, ACF researchers are encouraged to adopt a long-term perspective (e.g., a decade or more) to identify longer-term patterns and measure policy processes and change within subsystems. While earlier conceptualizations of the public policy process (including institutional approaches and the stages heuristic) implied a characteristic legislative, regulatory, or issue cycle, observable policy processes are ongoing and typically do not have precise starting or ending points (Lindblom, 1968). Therefore, analyzing strategic behavior, coalition actor learning, patterns of policy change, and assessments of policy success or failure should take a longer-term perspective. However, a decadal perspective is neither necessary nor always appropriate: the ACF can be applied to research questions amenable to study in shorter (or longer) time frames, though the focus should still be on temporal processes that characterize public policy over time.

THE TEXTBOOK VERSION OF THE ACF

In policy process research, as with other domains of scientific inquiry, frameworks tend to be associated with an *exemplar* that provides a representative example that illustrates the key concepts, phenomena, and relationships under study. An exemplar may originate from the initial application of a framework, or become established through empirical work in which the theoretical arguments are most clearly demonstrated.

It usually serves as the baseline against which empirical research results are compared and evaluated, sometimes implicitly. An exemplar is often referred to as the “textbook version” of the applicable framework because it is widely employed as an illustrative example to communicate a framework or theory, particularly in educational contexts like books or classrooms. It also provides a more accessible or simplified perspective compared to the framework or theory’s full scope, focusing on a straightforward application while potentially omitting the more complex or nuanced aspects that emerge in broader or more varied contexts.

Additionally, textbook versions are usually an idealized model designed to portray a distilled version of a phenomenon for easier understanding and communication. While some empirical applications approximate this ideal, none fully reach it. This is due to several factors, including the inherent complexity of the phenomena under study, often involving numerous dimensions that cannot be entirely accounted for and will inevitably display some idiosyncracies and exceptions. The primary argument for using ideal types lies in their utility as a baseline comparison and their practicality in communications.

For the ACF, the textbook version is a mature, adversarial policy subsystem in an advanced polyarchy. The textbook ACF emerged partly from early empirical work by Sabatier and Jenkins-Smith. For Sabatier, it was his research on the development of the Lake Tahoe Basin policy subsystem. This was a relatively autonomous governing arena with policy actors strategically interacting to influence decision-making. Over time, these policy actors’ belief systems grew more alike among allies and segregated from opponents to form a pro-economic development and a pro-environmental coalition that endured for years (Sabatier & Hanf, 1985; Sabatier & Brasher, 1993). Jenkins-Smith observed similar circumstances in other high-conflict issues, including Alaska’s oil export policy subsystem. In this setting, he studied the role of scientific and technical information in analytical debates among competing coalitions that employed shifting strategies to defend their policy core beliefs. He found the expected—a political standstill between opposing coalitions and the absence of cross-coalition learning (Jenkins-Smith, 1988).

The textbook context of the ACF developed around key assumptions about the broader environment, including relatively stable parameters and a type of strategic interaction among coalitions within the policy subsystem. It builds on a critical assumption that there will be opportunities for policy oppositions to arise and engage across varied

issues—the essential ingredients of Dahl’s advanced polyarchies (Dahl, 1971; Sabatier, 1987, 1988). This context allows for and emphasizes adversarial policy subsystems marked by inter-coalition polarization and intra-coalition coherence. It focuses on mature subsystems where sufficient information and experiences harden belief systems and engage the devil shift, providing both a necessary connection among policy actors to form coalitions and a compelling reason to organize and cooperate to overcome threats to collective action.

Figure 1 provides a depiction of the textbook version of the ACF flow diagram, delineating the key factors and relationships that shape the dynamics of the policy process. While the diagram has incrementally changed over time and has been adapted to focus on specific theories applied to the ACF (Koebele et al., 2023), the central elements have remained consistent. The rectangle on the right represents the policy subsystem itself, illustrating a case with two competing coalitions that represent the shared beliefs and resources of their respective actors. These coalitions employ various strategies to influence decisions made by government authorities, impacting institutional rules, policy outputs, and, ultimately, policy outcomes. These decisions not only have feedback effects within the policy subsystem but also spill over to influence external affairs.

One category of variables that shape subsystem affairs consists of relatively stable parameters. These parameters encompass the fundamental social, cultural, economic, physical, and institutional structures that surround the macro political system and its associated subsystems (Hofferbert, 1974; Heclo, 1974). Some concepts within this category are best understood as external to the subsystem, such as the basic constitutional structure of a state. In contrast, others can be internal to the policy subsystem, such as the physical and social conditions associated with the problem area (e.g., distributions of natural resources, ethnic and racial distributions within the population, or prevailing cultural norms).

A second category of variables encompasses more dynamic external events. These events encompass relevant factors external to the subsystem that are prone to change. Examples include socioeconomic conditions, the state of technology relevant to the subsystem, public opinion, the composition of governing coalitions (Burnham, 1970), and spillover effects from other policy subsystems. The examples listed under relatively stable parameters and dynamic external events in Fig. 6.1 are meant to be

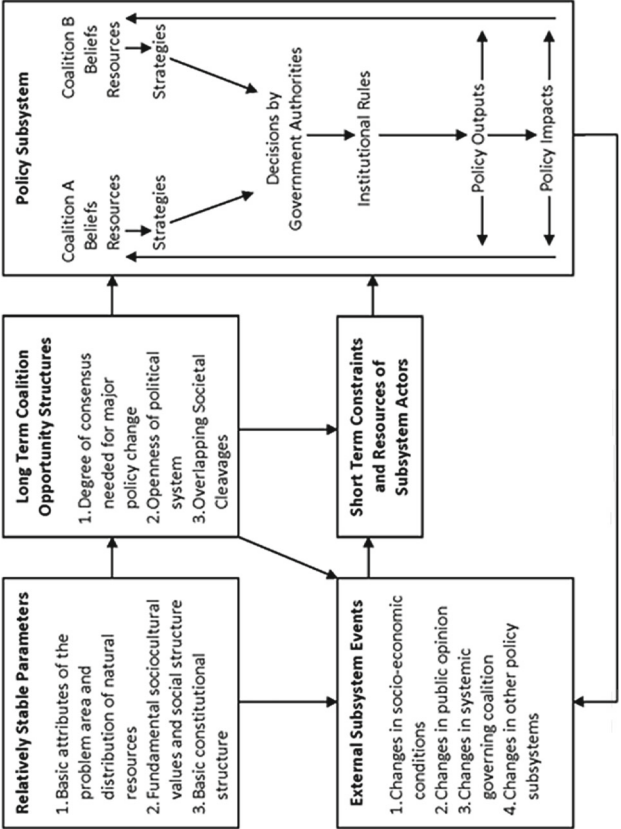


Fig. 1 The ACF flow diagram (Weible et al., 2011)

illustrative rather than exhaustive, as other concepts may fit into each category. For instance, crises and disasters could fall under dynamic external events (Nohrstedt, 2011).

Between the category of relatively stable parameters and the policy subsystem, there is an intermediary category of concepts that pertain to the nature of long-term coalition opportunity structures. As discussed above, coalition opportunity structures form the basis for decision-making within the political system that is relevant to policy within the subsystem. As such, they include the system of decision-making venues that impact and can be impacted by policy subsystems and societal outcomes. The rules and norms that define these institutions determine the level of consensus required for significant policy change, reflect the openness of at least part of the macro system and subsystems, and the opportunities for conflict and cooperation among overlapping societal divisions. Long-term coalition opportunity structures are crucial by-products of relatively stable parameters, serving to enable collective action while simultaneously regularizing and constraining opportunities for actors to engage in shaping public policy. Thus, the characteristics of these opportunity structures have significant implications for policy subsystems.

Between external events and the policy subsystem are subsystem actors' short-term constraints and resources. This implies that changes outside the subsystem can create short-term opportunities on which coalitions can capitalize or generate short-term upsets that diminish a coalition's options.

The ACF's flow diagram captures part of the textbook ACF but not all of it. For example, not all adversarial subsystems have two coalitions—some might have three or more. Additionally, the mentioned examples of external events should not be limited to the four listed in Fig. 1, similar to those items listed under relatively stable parameters and long-term coalition opportunity structures. The utility of the ACF flow diagram is that it illustrates and helps to convey the essential features of the textbook version. It does not provide a comprehensive list of allowable indicators of concepts, nor does it enumerate an exhaustive set of hypothesized interactions and feedbacks.

THE ACF'S THREE THEORIES

Describing ACF's theories is not straightforward. While the original hypotheses (referenced in the Appendix) align mainly with the textbook version of the Framework and offer a basic understanding of the theories' operations, they do not fully capture the textbook ACF's complexity and coherence. It is also crucial to note that each theory operates somewhat independently, though they share concepts that can interact across different theories.

The presentation of the three theories begins with the textbook version, followed by illustrated empirical examples that support, refute, or provide inconclusive or deficient backing of expectations. Additionally, illustrative theoretical arguments and applications that extend beyond the textbook are discussed for each theory.

The Advocacy Coalition Theory

The Textbook Version

The textbook version of the Advocacy Coalition Theory depicts a state of the world with an adversarial subsystem characterized by intense competition. It is a confrontational context where actors strategically coordinate their efforts and resources among allies with similar belief systems, forming and maintaining advocacy coalitions. These coalitions "devil" their opponents, interpreting them as overly malicious and powerful adversaries (Sabatier et al., 1987). While these coalitions tend to be stable and persistent in their beliefs, change will more likely occur in secondary beliefs rather than policy core beliefs.

The Advocacy Coalition Theory posits an argumentative context where gaining the support of key authorities and mobilizing the general public are critical tactics for advancing a coalition's cause (Sabatier & Pelkey, 1987). Where possible, coalitions seek to change the subsystem's rules and procedures to secure advantages or to influence the substantive policies directly impacting subsystem outcomes. While a policy win might give one coalition momentum, a policy loss can also serve as a powerful motivator, driving a coalition to regroup and strategize for future victories in an ongoing game of political maneuvering to influence public policies and outcomes.

In the constant struggle to influence and control a subsystem, coalition policy actors assume different roles with varying expectations. Purposive groups, such as nonprofits driven fundamentally by value orientations, tend to hold their beliefs more rigidly than material groups, like private entities motivated chiefly by profit (Jenkins-Smith et al., 1991). Meanwhile, actors representing administrative agencies often advocate for more moderate positions than their interest group allies, whether purposive or material (ibid). Conversely, while typically not aligned with a coalition, policy brokers seek to mitigate conflict and sustain the norms and institutional arrangements (the coalition opportunity structures) that make collective decision-making within the subsystem possible. In so doing, they seek to diffuse conflict in ways that facilitate compromise—and possibly shared learning—on policy issues.

Evidence

The cumulative evidence tends to support the propositions of the textbook Advocacy Coalition Theory. For example, empirical evidence has supported the argument for two or more stable coalitions when differences in policy core beliefs might escalate into conflict, but not without nuances and exceptions. In their study of U.S. automotive pollution control over 26 years, Zafonte and Sabatier (2004) analyzed legislative testimonies at congressional hearings to find two advocacy coalitions, one for strict and the other for weak standards. They also observed changes in coalition composition for both coalitions and the emergence of a third coalition (pursuing moderate standards) over time. However, they also found little support for the expectation that policy core beliefs would be more stable than secondary beliefs. For studies of advocacy coalitions over time, Zafonte and Sabatier's findings are not unusual with the identification of stable coalitions with some members leaving, defecting, or joining over an extended period, and mixed results in the relative stability of the ACF's different belief system levels.

Other studies have explored the mechanisms of coalition stability.¹ For example, studies have examined how the devil shift contributes to coalition stability. Kingiri (2014) used multiple methods (e.g., interviews and documents) to examine the biosafety subsystem in Kenya and found that the devil shift contributed to sustaining an advocacy coalition and limiting learning between coalitions.

The textbook version also anticipates coordination primarily among coalition allies, with relatively infrequent interactions between opponents. In its most extreme, though unlikely, form, this would result in a coalition characterized by complete cohesion, where all allies interact and agree, and complete segregation, where no interaction or agreement occurs between opponents. While no real-world scenario perfectly matches this extreme version, much of this research has confirmed a strong correspondence between actors' belief systems and their coordination behaviors (Henry, 2011; Holm & Berardo, 2020; Ingold, 2011; Satoh et al., 2023; Weible, 2005). For instance, in a study of Swedish carnivore policy, Matti and Sandström (2013) surveyed coalition members and found a tight coupling between expressed beliefs and coordination networks. However, evidence also shows that allies form ties for other reasons (Henry et al., 2011; Nohrstedt, 2010).

Additionally, the textbook version expects that coalitions strategically utilize resources to gain the upper hand over their opponents. Many studies have analyzed the behaviors and use of resources of advocacy coalitions and found support for this expectation (Payán et al., 2017; Sotirov & Winkel, 2016; Weible, 2007; Wiley et al., 2021). For example, Nohrstedt (2011) provided one of the first detailed descriptions of coalition resources in the context of Swedish signals intelligence policies, finding, at least in this case, that some political resources were more important than others—particularly access to legal authorities to make policy decisions. Furthermore, research has also found that scientific and technical information is utilized as a strategic resource by coalitions (Funke et al., 2021; Jenkins-Smith 1988; Kim, 2024).

Regarding the role of different types of actors, Jenkins-Smith et al. (1991), Jenkins-Smith and St. Clair (1993), and Montpetit (2012) found confirmatory evidence supporting expectations about the role of administrative agencies, purposive groups, and material groups. However, other studies that have since examined these policy actors found little to no support (Aerne & Bonoli, 2023; Giordano, 2020; Nedergaard, 2009; Pattison, 2018; Malmberg & Strachan, 2023).

Studies also tend to confirm that brokers often help bridge arguments between coalitions. For example, Henry et al.'s (2011) survey of actors involved in California's land use and transportation planning subsystems across four regions found that brokers helped build relations among advocacy coalitions.

Beyond the Textbook Version

The textbook version of the ACF assumes a high-intensity policy conflict at the level of the policy subsystem. The de-escalation of policy conflict between coalitions creates a collaborative subsystem of cooperative coalitions (Koebele, 2019). For example, using coalition member surveys, Kammerer et al. (2021) analyzed climate change subsystems across four countries to find that beliefs and collaboration are tightly linked in countries with high-conflict, adversarial policy subsystems (South Korea and the United States) but not in lower-conflict countries with collaborative policy subsystems (Sweden and Switzerland). In other words, turn up the conflict intensity, and coalitions tighten their ranks, linking coordination and beliefs as the textbook expects; turn down the conflict intensity, and coalitions loosen their ranks with a tendency to coordinate for other reasons, such as professionalism or information.

Among the expectations for collaborative subsystems compared to adversarial subsystems is that much of the coalition dynamics will be different, from how they exchange and use information to their interactions with opponents. For example, Weible et al. (2011) used three policy actor surveys spanning 17 years in the U.S. Lake Tahoe Basin water and land management to find a drop in the devil shift (but not in the angel shift) when the subsystem transitioned from adversarial to collaborative.

Additionally, the expectation of competitive coalitions within an adversarial subsystem presumes a distribution of political resources that is more or less even. In contrast, an uneven distribution of political resources is more likely to result in a single, dominant coalition in a unitary subsystem (Leifeld, 2013; Lertzman et al., 1996; Olofsson et al., 2018; Osei-Kojo, 2023). The study of a unitary policy subsystem with a dominant coalition and one or more subordinate coalitions will likely involve efforts by the dominant coalition to deny access to resources to the subordinate ones. These could include controlling the narrative or dominating agendas in decision-making venues to maintain power and prevent oppositional forces from mobilizing and gaining any influence. For example, Lertzman et al. (1996) showed how a dominant coalition emphasized uncertainty to maintain control of a British Columbia forest policy subsystem in Canada.

Nascent subsystems also differ from the ACF textbook's mature subsystems, a distinction that produces different theoretical arguments and hypotheses (Beverwijk et al., 2008; Ingold et al., 2017; Osei-Kojo, 2023; Sabatier & Brasher, 1993; Stritch, 2015). For example, within

nascent subsystems, coalition members might not be semi-autonomous, the newness of the issue may make belief systems more fluid, there may be no governmental subunits that address the issue, and non-governmental entities may similarly lack focus on the issue (Sabatier & Jenkins-Smith, 1999, p. 136). In a recent study of subsystem development, Wiedemann and Ingold (2024) examined an emerging pesticide policy subsystem in Uganda to ascertain when policy actors developed shared policy preferences. Based on the case study, they argue that shared preferences emerge in part through the development of trust or convergence on similar problem perceptions.

The Policy-Oriented Learning Theory

The Textbook Version

In mature, adversarial subsystems in advanced polyarchies, coalition members continuously seek out information and adapt to their experiences and surroundings to realize their policy core beliefs. While the boundedly rational characteristics of the individual actors make the uptake and processing of information imperfect, learning occurs and can spread and diffuse across a coalition. The extent and speed of this diffusion depends on the compatibility of the new information with allies' beliefs, its persuasiveness, coalition dynamics such as turnover, and the external pressures for change (Sabatier, 1988, p. 149).

Policy actors engage in learning across an array of topics that are germane to the subsystem, including monitoring the performance of policies and programs, improving their understanding of policy issues, such as the seriousness and causes of problems, and identifying and counter-acting threats to their belief systems (Jenkins-Smith & Sabatier, 1993, pp. 42–43). This learning process also involves reflecting on past strategic successes and failures, from implementing policies to utilizing various instruments to achieve their policy core beliefs (Sabatier & Pelkey, 1987).

Given the boundedly rational nature of actors in the textbook ACF, coalition members tend to interpret ambiguous information in ways that reinforce their belief systems. When confronted with information that conflicts with their beliefs, they tend to deflect or ignore it (Kunda, 1990; Lord & Taylor, 2009). When new information necessitates belief change,

coalition members are more likely to make adjustments to their secondary beliefs before reconsidering any aspects of their policy core beliefs.

The competitive environment sparks cycles of strategic counteractions between rival coalitions. When one coalition presents evidence of a problem and proposes a solution that threatens the belief systems of its opponents, the opposing coalition will mobilize to counter the argument by sponsoring studies that produce new data and evidence (Jenkins-Smith & Sabatier, 1993, p. 46; Sabatier, 1988, pp. 93–94). In this context, providers of scientific and technical information—such as scientists, technicians, policy analysts, and consultants—serve as key “experts” who help counter opponents’ arguments and reinforce a coalition’s belief system (Jenkins-Smith, 1990; Sabatier & Zafonte, 2001). Even when coalitions talk past each other, the process of engagement over evidence and analysis can support a coalition’s objectives as policy brokers or other important government officials learn from the exchange and—potentially—increase support for that coalition’s preferred policy options (Sabatier & Jenkins-Smith, 1993, p. 219).

Learning (such as changes in beliefs) between coalitions are more likely to occur under four conditions (Heintz & Jenkins-Smith, 1988, pp. 269–270; Jenkins-Smith, 1990).

The first is when the members of competing subsystem-level coalitions possess roughly comparable technical resources, enabling them to bring competing perspectives to policy debates within subsystem forums. Absent those resources, one or more of the coalitions cannot effectively engage in technical debates, making it less likely that analyses will uncover and express new information and findings that support changing beliefs.

The second condition is that the issues under contention are subject to moderate levels of conflict. This is expected to occur when the debate is focused on the secondary beliefs of both coalitions or when the issue involves the policy core beliefs of one coalition and the secondary beliefs of another. However, it is important to note that debates on secondary issues can sometimes have significant policy core implications, leading to intense conflicts (Jenkins-Smith, 1990, pp. 122–166).

The third condition is that the issue at hand is reasonably analytically tractable, meaning rival coalitions share a common epistemological foundation and methodological foundation for understanding the problem (Jenkins-Smith, 1990, pp. 97–99; Jenkins-Smith & Sabatier, 1993, pp. 51–52). Analytically tractable issues are those with agreed-upon methods (e.g., specific types of policy analysis, quantitative techniques,

etc.) and sources of reliable data that enable coalitions to reach a common empirical understanding. However, when the analytical findings begin to threaten the coalitions' policy core beliefs, the shared epistemological foundation itself may come under attack. When that occurs, the analytical approaches themselves are questioned, and a broader range of competing methods and data may be introduced, making shared understanding difficult. Notably, analytical tractability tends to be low when the issue touches upon normative issues (i.e., normative policy core beliefs or even deep core beliefs), such as morality issues of abortion, poverty, and racism.

The fourth condition occurs when subsystem-level coalition members participate in venue-level decision-making with conflict-mitigating institutional arrangements (Jenkins-Smith, 1990, pp. 99–103). These venues typically feature rules and norms that involve both coalitions and promote constructive communication, information exchanges, and joint analytical approaches.

Evidence

Most of the evidence to date supports the argument that learning predominantly comes in the form of reinforcement, such as greater confidence or certainty in a belief, rather than a change in the position of a belief (Meijerink, 2005; Moyson, 2017; Pattison, 2018; Weible et al., 2023). For example, Moyson's (2017) survey of actors involved in the Belgian rail and electricity sectors found highly stable belief systems, arguably due to reinforcement based on biased assimilation and motivated reasoning (Kunda, 1990; Lord & Taylor, 2009). In other words, in high-conflict situations, most learning occurs among coalition allies, strengthening their belief systems (perhaps by reducing uncertainty, thereby reinforcing their views) rather than among opponents, for whom the change might threaten the worldviews espoused by their belief systems.

Evidence is mixed regarding learning that prioritizes (or sacrifices) secondary beliefs over policy core beliefs. For example, Lange et al. (2022) confirmed expectations for more secondary than policy core learning based on 20 interviews of people involved in national forest policy in the Pacific Northwest in the United States. However, other studies show learning for *both* secondary and policy core beliefs (e.g., Larson et al., 2006; Sabatier & Brasher, 1993).

The ACF literature continues to show that institutional arrangements of the decision-making forums also affect learning. In the contested space of fisheries management, a study of aquaculture partnerships, which were decision-making venues with collaborative rules of engagement and involving a representative set of people interested in or affected by the partnership decision on fish farming, Leach et al. (2014) measured self-reported gains in knowledge about various aspects of aquaculture in the operation and governance of the industry as an indicator of learning.

Thin evidence exists regarding the behavioral aspects of learning, i.e., change based on learning from past strategies and tactics. One exception is Luxon's (2019) analysis of actors' responses to the European Union's Habitat Directive in France and Sweden. Luxon found that French actors adapted better than Swedish actors in strategically responding to a changing process. As a result, the French actor's strategies more closely matched opportunities, making them more effective. Additionally, rarely has research dealt with the increased likelihood of learning regarding analytical tractability, including a shared agreement on using quantitative evidence (Sotirov & Memmler, 2012), and no study to date has compared learning across subsystems that focus on natural versus social issues.

Research on the role of brokers and learning has a long tradition in the ACF (Sabatier & Jenkins-Smith, 1993). Among the challenges in studying brokers has been establishing methods for identifying them. For example, Ingold and Varone (2012) identified two (potential) brokers in the Swiss climate policy subsystem. These brokers were government agency players who tended to have reputations and credible expertise and occupied bridging positions between competing coalitions. Similar patterns have been observed in U.S. policymaking regarding offshore oil and gas leasing, as agency representatives tended to take moderating positions between competing coalitions (Jenkins-Smith et al., 1991). Critical exogenous events (such as oil crises) led them to shift their positions relative to the two competing coalitions, as priorities (energy independence versus offshore environment quality) within presidential administrations changed over time.

Beyond the Textbook Version

Like in the Theory of Advocacy Coalitions, changing the level of policy conflict within a subsystem often influences the characteristics and dynamics of policy-oriented learning. Cross-coalition learning is most

probable when conflict levels are moderate in collaborative policy subsystems. For instance, Gronow et al. (2021), using surveys of actors to study deforestation and forest degradation, found that learning was more likely in Indonesia and Vietnam (both low conflict) but less likely in Brazil (high conflict). Similarly, Morf et al. (2023) analyzed two Swedish marine national park planning processes, discovering that learning was linked to shared reliance on the resource, common interests, collaborative experience, and the presence of forums fostering cross-coalition exchanges. Funke et al. (2021) also observed cross-coalition learning increasing as the Acid Mine Drainage subsystem in South Africa transitioned from unitary to adversarial to collaborative.

At times, work outside ACF's textbook settings incorporates both textbook and non-textbook dimensions. For instance, Chu et al. (2022) confirmed the ACF's textbook expectations regarding the role of a policy broker facilitating learning in a venue in a village in Hong Kong, a context with less polyarchical political system characteristics as found in Western democracies. The broker's role led coalition members to evolve their beliefs and reach consensus on public policies, illustrating how certain ACF expectations can hold even in non-textbook political environments.

Studies of nascent subsystems can sometimes affect the observed patterns of learning. For example, Stritch's (2015) analysis of a labor subsystem in Canada found that the nascency of tax information and disclosure limited the scope of learning. However, sometimes, textbook patterns of learning are confirmed in nascent subsystems. For example, Yun and Kim (2023) confirmed ACF textbook expectations on learning in nascent welfare subsystems in South Korea.

In studies of unitary subsystems with dominant coalitions, Lertzman et al. (1996) demonstrated that a dominant coalition both learned and adapted in order to maintain its legitimacy in a Canadian forest policy subsystem. Likewise, Leifeld (2013) extended this understanding by showing that cross-coalition learning required some polarization in the German pension system. In contrast, Leifeld found little learning between a dominant and subordinate coalition. In other words, the German pension subsystem had to shift from being predominantly unitary to more adversarial for cross-coalition learning to occur.

As these examples demonstrate, policy-oriented learning outside the textbook setting sometimes confirms textbook expectations, but often it

does do not. The explanations offered for these refutations and confirmations frequently differ from those found in textbook settings, presenting a largely untapped opportunity to develop a more nuanced theoretical understanding.

The Policy Change Theory

The Textbook Version

In mature, adversarial subsystems in advanced polyarchies, roughly evenly matched coalitions compete to influence policy, creating impasses for major changes to the policy core attributes of the policies and programs. Meanwhile, secondary aspects of the subsystem continue to evolve and change, often driven by policy-oriented learning, within and sometimes between advocacy coalitions. These secondary changes are frequently facilitated by a policy broker who helps coalitions mitigate conflict within decision-making venues to reach agreements.

Driven by competitiveness between the coalitions, major policy changes typically require a disruption, often triggered by events either external or internal to the policy subsystem. External events, such as shifts in public opinion, elections leading to a change in the macro-level or systemic governing coalition, crises or disasters, and changes in socioeconomic conditions, can redistribute resources and provide opportunities for a coalition to exploit, influencing institutional agendas, gaining allies among decision-making authorities, and potentially driving changes in public policies. Similarly, events internal to the subsystem, such as an acute failure of an existing program, present another set of opportunities for coalitions to capitalize. However, neither internal nor external events alone are sufficient to drive change; both require a coalition actively leveraging these events in the policy process.

In subsystems where the policies and programs have long reflected the views of a single dominant coalition, possibly dating to the subsystem's formation, significant changes to the policy core are unlikely unless that coalition loses significant power or the subsystem is subject to changes imposed by higher-level jurisdictions within the broader political system.

Finally, the polarity between coalitions can be resolved, and negotiations between both of them can occur when they reach a hurting

stalemate—where the status quo becomes intolerable, and all other options for policy change, apart from negotiating with the opponent, have been exhausted.

Evidence

Empirical evidence tends to confirm expectations that internal and external events, along with an exploitive coalition, drive policy change (e.g., Fischer, 2014; Gutiérrez-Meave, 2024; Heikkilä et al., 2014; Heinmiller, 2023a; Metz et al., 2021; Nohrstedt, 2010). For example, Heinmiller (2023a) provides a detailed historical account of how gun rights and gun control advocacy coalitions in Canada contributed to major and minor policy changes over 20 years. However, in these situations, the activities of coalitions exploiting opportunities from such events have been undertheorized.

Furthermore, while there is evidence that policy-oriented learning is chiefly associated with changes in the secondary aspects of policy, studies also show the exception when it does not and even find situations where learning leads to changes in the policy core aspects of the subsystem (Pierce et al., 2020). Part of the challenge is distinguishing secondary (minor) and policy core (major) types of policy change.

Arguments about policy change being driven by displacement of the coalition that originally formulated the policies and programs or through decisions by higher jurisdictions has been studied less (Heinmiller, 2023b). Still, these studies tend to confirm expectations. Finally, few studies have analyzed cases involving a hurting stalemate and negotiated agreements (Pierce et al., 2020). Those that have found confirming evidence.

In general, almost all studies of policy change have confirmed at least one of the ACF's textbook explanations. The ongoing confirmations of the varied conditions for policy change may be both a blessing and a curse for ACF's Policy Change Theory. While they are constantly validated in empirical applications, the lack of refutation limits the accumulation of knowledge beyond the argument that the Theory generally has it right. Using this approach, the Theory could advance by linking specific aspects of the policy context to the factors most likely to be conducive to policy change, which reformulates the question from "What causes policy to change?" to "Under what conditions is policy change most likely to result from factor X?"

Beyond the Textbook Version

Studying contexts that span outside the textbook's adversarial subsystems, Fischer (2014) used 11 cases in Switzerland from 2001 to 2006 to examine different coalitional structures (e.g., competing vs. collaborative coalitions). He found that these structures correspond to distinct levels of conflict and cross-coalition collaborations and affect the type of policies adopted. For example, low conflict and high collaboration between coalitions are more likely to lead to major change. In contrast, competing coalitions with high conflict and collaboration tend to support incremental change in policy from the status quo.

In centralized or authoritarian settings, Li and Wong's (2020) decades-long qualitative analysis of China's birth control policy subsystem found that policy changes followed external and internal events and changes imposed by a superior jurisdiction. In contrast to advanced polyarchical settings, they argued that hierarchically imposed change is more likely in China's centralized or authoritarian settings.

Outside of the ACF's adversarial subsystems, Albright's (2011) qualitative long-term study of flood management in Hungary focused on how minority coalitions exploited extreme flood events to obtain more funds, new amiable venues, and adept leadership to overcome a dominant coalition in instituting policy change. That is, in a unitary subsystem, it took a substantial shock to the system and an exploitive coalition to produce policy change, consistent with long-standing ACF arguments.

In a study of a nascent subsystem outside of an advanced polyarchy, Beverwijk et al. (2008) found that instability in the relatively stable parameters led to policy change rather than just external events or learning in a nascent educational subsystem in Mozambique.

The ACF's theories of coalitions, learning, and policy change offer lenses for describing, explaining, and predicting the behavior of complex systems. While each of the theories is described separately here, they interrelate, creating the subsystem dynamics and coalition behaviors that ACF scholars utilize to make sense of the policy process. Simultaneously, it is essential to recognize that no framework and theory can comprehensively capture all inputs, outputs, interactions, and mechanisms in such situations. Occasionally, localized idiosyncratic factors come into play in ways that surprise (and perhaps enlighten) framework theorists. As lenses, the primary purpose of any theory or framework is to help simplify complexity and render it comprehensible. However, the use of a lens should not

prevent researchers from including something relevant that falls outside of it, nor should its use compel them to include something irrelevant just because it falls within the lens. In either case, the framework and theory would hinder rather than facilitate understanding, leading to false confirmations and distortions of critical aspects of the policy process.

NEW DIRECTIONS IN ACF SCHOLARSHIP

This volume brings together a sample of eleven applications of the ACF that highlight its traditional strengths and new directions. This scholarship was chosen to reflect some—but not all—of the breadth of methodological and theoretical contributions that will shape the future directions of the ACF. In particular, the first five chapters of this volume showcase work that highlights the ACF’s textbook approach in mature, adversarial policy subsystems within advanced polyarchies. The subsequent chapters shift attention to other settings and non-traditional foci.

Textbook Applications

In studying coalitions, Antti Gronow, Keiichi Satoh, and Tuomas Ylä-Anttila (Chap. 2) begin this section with their analysis of the Finnish climate change policy subsystem. This adversarial policy subsystem is analyzed with panel survey data to find the stability of coalitions, although with the instability of ties and beliefs. Similarly, Georgia Pfeiffer, Adam Douglas Henry, and Thomas Dietz (Chap. 3) analyze survey data to analyze belief and coordination networks among policy actors engaged in a U.S. environmental risk policy subsystem.

Tim Heinmiller (Chap. 4) offers the first of three chapters on policy change. Heinmiller examines six instances of policy change in a sample of six different policy issues in Canada (e.g., from gun policy to cannabis policy), supporting the ACF’s second hypothesis that major policy change follows changes in the governing coalition. The second policy change study comes from Allegra H. Fullerton, Elizabeth A. Koebele, Tanya Heikkilä, Daniel Nohrstedt, and Christopher M. Weible’s (Chap. 5) work on 77 instances of policy change in Colorado’s oil and gas policy subsystem. They found that internal events were the most common pathway for policy change, exceeding those resulting from external events, learning, and negotiated agreements. The last chapter in this section, by Kuhika Gupta, Joseph T. Ripberger, Hank C. Jenkins-Smith, and Kristin

Olofsson (Chap. 6), focuses on over a decade of 117 policy changes in U.S. Nuclear facility siting efforts. Their emphasis and findings are on how coalition opportunity structures conditioned the likelihood of policy change.

Non-textbook Applications

Two chapters deal primarily with policy-oriented learning and the ACF's belief system concept. Matthew Nowlin (Chap. 7) tackles the challenges of measuring belief system change, using a decade of survey data on nuclear energy and climate change collected in the United States. He finds that learning occurs in both domains, leading to substantive changes in expressed beliefs and changes in the levels of certainty with which those beliefs are held. His study leads the way in integrating belief change and reinforcement as measures of learning. Next, Jill Yordy's (Chap. 8) chapter operates at the micro level of policy actor aggregation by diving deeply into the ACF's belief system concept. Yordy uses grounded methods to analyze housing issues and highlights the role of democratic values and beliefs in the ACF's belief system. She concludes by arguing that this is one of the missing links in the ACF and a way to bring normativity into the framework.

The remaining four chapters deal with subsystem contexts and the associated coalition and policy change characteristics. These begin with Leanne Giordono's (Chap. 9) study, which operates across levels of jurisdiction in analyzing low-salient adversarial and collaborative subsystems in the context of a developmental disabilities subsystem in the United States. Using qualitative methods, her study of policy change focuses on resources and strategies of coalition influence, particularly the mix of cooperative and coercive kinds.

Karin Ingold, Ruth Wiedemann, Manuel Fischer, and Frédéric Varone's (Chap. 10) chapter employs the ACF to study the nascent stage of subsystem development across three different issues in Switzerland. Importantly, they find clear deviations from the expectations of the textbook ACF within nascent subsystems, in which shared beliefs do not lead to coordination.

Kimberly Wiley, Chelsea DeMasters, and Caroline Casola (Chap. 11) analyze the evolution of the gender-based violence subsystem in the United States from a single dominant coalition to rival advocacy coalitions. Their study highlights how a shifting distribution of access to

resources shapes subsystem evolution. This chapter also explores the importance of the distinctive data sources available to researchers.

Finally, Alex Osei-Kojo (Chap. 12) applies the ACF outside Western Democracies by analyzing the evolution of a unitary policy subsystem from nascency to maturity in Ghana's oil and gas development. Using news media and interview data, he finds that the subsystem's actors, issues, and strategies shift over time as the dominant coalition forms.

In sum, as a collection these eleven chapters provide a sample of the full range of applications of the ACF. The first five focus on textbook applications of the ACF, herein regarding advocacy coalition theory with Gronow et al. and Pfeiffer et al. and policy change theory Fullerton et al., Gupta et al., and Heinmiller. The latter five cases highlight innovations that fall beyond traditional textbook applications. Nowlin and Yordy's chapters focus on policy-oriented learning theory and the belief system concept, respectively. The remaining chapters focus on traditional themes of the ACF but outside its adversarial context with Giordano, Ingold et al., Wiley and DeMasters, and Osei-Kojo. While these chapters can be read in any order, the current sequence is recommended.

This volume ends with a concluding chapter by Weible and Jenkins-Smith that synthesizes the insights across the eleven textbook and non-textbook applications. It uses that synthesis to pose a different question: What adjustments are needed when scholars apply the ACF outside its textbook "comfort zone"? In response, it argues that the ACF has always simplified and structured the complexity of the policy process by implicitly situating subsystems and the broader system architecture on key conceptual scales and levels, wherein the textbook version occupies just one possible (albeit very useful) configuration among many. When researchers apply the ACF outside the textbook context, they consciously or unconsciously adjust these levels, or operate on and across different scales and levels. The book concludes with an ACF research agenda that springs from an orientation that structures and simplifies complexity via various configurations of scales and levels.

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APPENDIX: ACF TEXTBOOK HYPOTHESES

Advocacy Coalition Theory

Coalition Hypothesis 1	On major controversies within a policy subsystem when policy core beliefs are in dispute, the lineup of allies and opponents tends to be rather stable over periods of a decade or so
Coalition Hypothesis 2	Actors within an advocacy coalition will show substantial consensus on issues pertaining to the policy core, although less so on secondary aspects
Coalition Hypothesis 3	Actors (or coalitions) will give up secondary aspects of their belief systems before acknowledging weaknesses in the policy core
Coalition Hypothesis 4	Within a coalition, administrative agencies will usually advocate more moderate positions than their interest-group allies
Coalition Hypothesis 5	Actors within purposive groups are more constrained in their expression of beliefs and policy positions than actors from material groups

Policy-Oriented Learning Theory

Learning Hypothesis 1	Informed conflict between the two coalitions. This requires that: (a) each has the technical resources to engage in such a debate and (b) the conflict be between secondary aspects of one belief system and core elements of the other or, alternatively, between important secondary aspects of the two belief systems
Learning Hypothesis 2	Policy-oriented learning across belief systems is most likely when there exists a forum which is: (a) prestigious enough to force professionals from different coalitions to participate and (b) dominated by professional norms
Learning Hypothesis 3	Problems for which accepted quantitative data and theory exist are more conducive to policy-oriented learning across belief systems than those in which data and theory are generally qualitative, quite subjective, or altogether lacking
Learning Hypothesis 4	Problems involving natural systems are more conducive to policy-oriented learning across belief systems than those involving purely social or political systems because in the former many of the critical variables are not themselves active strategists and because controlled experimentation is more feasible
Learning Hypothesis 5	Even when the accumulation of technical information does not change the views of the opposing coalition, it can have important impacts on policy—at least in the short run—by altering the views of policy brokers

Policy Change Theory

Policy Change Hypothesis 1	Significant perturbations external to the subsystem, a significant perturbation internal to the subsystem, policy-oriented learning, negotiated agreement, or some combination thereof are necessary, but not sufficient, source of change in the policy core attributes of a governmental program
Policy Change Hypothesis 2	The policy core attributes of a government program in a specific jurisdiction will not be significantly revised as long as the subsystem advocacy coalition that instated the program remains in power within that jurisdiction—except when the change is imposed by a hierarchically superior jurisdiction

NOTE

1. Part of the challenge in studying coalition stability is the meaning of the term and its operationalization. It comes in at least five forms (see Henry et al., 2011; Jenkins-Smith et al., 1991; Larsen et al., 2006; Leifeld, 2013; Li & Wong, 2020; Nohrstedt, 2005; Osei-Kojo, 2023; Pierce, 2011): Coalition stability—is there evidence that a coalition exists and persists over time? Coalition member stability—might the coalition be stable, but its members change? Coalition belief system stability—to what extent do coalition members express belief stability, and if beliefs change, do secondary beliefs change more readily than policy core beliefs? Coalition polarization and cohesion stability—to what extent are two coalitions segregated over time and show internal cohesion? Coalition influence stability—the degree to which a coalition maintains steady dominance over another coalition in a subsystem or does influence fluctuate between coalitions?

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Changing Beliefs, Enduring Coalitions: A Longitudinal Analysis of Policy Beliefs and Advocacy Coalition Structures

Antti Gronow, Keiichi Satoh, and Tuomas Ylä-Anttila

According to the ACF, policy core beliefs are the glue that hold actors in a coalition together (Jenkins-Smith & Weible, this volume). Traditionally, the ACF has assumed that policy subsystems have two or more competing coalitions with diverging policy core beliefs. In contrast, some studies suggest a single dominant coalition may in fact be the norm in non-pluralist countries, and that even polarized and competing coalitions may eventually unite as the policy subsystem stabilizes (e.g. Leifeld, 2013). Despite possible differences in the dynamics of advocacy coalition in pluralist and non-pluralist countries, a common understanding is that large-scale policy change is associated with policy core beliefs change resulting from external shocks and perturbations. Policy learning, in its turn, usually leads to incremental rather than major policy changes (for

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latest discussion on the pathways of policy change, see Heinmiller and Fullerton et al. in this volume).

However, little is known about how changes in the beliefs of policy actors affect coalition structures. If beliefs evolve in such a way that the policy subsystem becomes more conflictual, the ACF would expect the coalitions to become more entrenched. In the opposite case, if beliefs evolve toward consensus, the logical ACF assumption would be the opposite: coalitions would become less distinct or even converge into a single coalition (cf. Leifeld, 2013). In the absence of conflict, everyone can in principle coordinate with others to jointly develop policies in the agreed direction. Alternatively, it is possible that the conflict shifts to other issues and new coalitions form around beliefs about these new issues.

To study how coalition structures change in response to belief change, it is necessary to adopt a longitudinal perspective. We study the evolution of the Finnish climate change policy subsystem over a period that covers the subsystem just before the Paris Agreement (2015) and several years after. During this period, the policy debate gradually shifted from emission reduction targets toward specific policies to achieve the desired reductions. We examine whether a growing consensus on the need to meet climate change mitigation targets led to the dissolution of existing coalitions, and whether new coalitions were built around the concrete policy proposals.

Studies that examine the interplay between belief change and coalition change are rare. The few longitudinal studies that exist have focused on analyzing how policy beliefs are related to coordination of action from the perspective of coordination ties that exist at a given point in time (e.g. Henry et al., 2021), or they lack detailed data on coordination ties (Weible et al., 2022). We analyze coordination ties in detail, focusing not only on existing coordination ties but also on ties that disappear or are created as the policy subsystem matures. ACF studies have shown that belief similarity explains the coordination of action but very little is known about coordination ties and coalition structures when beliefs change. Our model accounts for these temporal dynamics and potential coordination costs, while explaining how homophily relates to coordination of action. Furthermore, we suggest that instead of predefining which beliefs belong to the policy core that presumably drives coordination, it makes sense to empirically investigate which policy beliefs divide actors into coalitions at a given point in time. Following Karimo et al. (2022), we argue that divisive

beliefs, i.e., those beliefs over which there is the most disagreement in the policy subsystem, are the most important for coalition formation.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

According to the ACF, policy is the result of the power dynamics between advocacy coalitions as they seek to advance policies that align with their policy beliefs. Policy beliefs are also an important driver of policy processes because shared beliefs contribute to the formation of coordination relationships and thus to the formation of coalitions. We base our discussion on these core assumptions of the ACF in the context of the longitudinal dynamics of coalition politics. We then discuss our theoretical expectations related to the fact that while beliefs serve as the glue of coordination, there are costs associated with establishing coordination ties. In addition, we discuss the likely ways in which policy actors “search” for new coalition members.

Divisive Policy Beliefs as the Glue of Coalitions

According to the ACF, the most important factor holding advocacy coalitions together is shared policy core beliefs (Sabatier, 1998; Sabatier and Jenkins-Smith, 1999). Policy core beliefs are generally defined as including “basic orientation and value priorities for the policy systems, or whose welfare in the policy system is of utmost concern,” as well as “assessments of the seriousness of the problem, its basic causes and the preferred solutions for addressing it” (Jenkins-Smith et al., 2014, p. 191). Policy core beliefs are contrasted with deep core beliefs, which are too general to serve as a basis for coalition formation, and with secondary beliefs, which are too specific to play this role.

Recent ACF literature, however, argues that the distinction between policy core and secondary aspects is not straightforward (Karimo et al., 2022; Kukkonen et al., 2017; Sotirov & Memmler, 2012). Several studies have argued that the distinction between policy core and secondary aspects depends on the choices made by researchers and many treatments of the distinction contradict each other across studies. Which beliefs matter for coordination of action may in fact depend on the context. For example, in some national climate policy subsystems, the belief in the existence of anthropogenic climate change may be important for coalition building. In other cases, other beliefs may be more important for

dividing actors into coalitions, such as beliefs about the extent to which the country should take a lead in international climate politics. In support of this argument, Karimo et al. (2022) showed that there is considerable variation across countries in which beliefs serve as the glue of coordination ties in climate policy. The authors also showed that agreement on divisive beliefs—beliefs over which there is considerable disagreement at the subsystem level—is most likely to drive the formation of coordination ties between actors and, consequently, the formation of coalitions.

This finding suggests that the divisiveness and conflictuality of beliefs is essential in explaining coordination of action, rather than the nature of the beliefs as policy core beliefs. However, it is still likely that the beliefs that happen to be divisive are also similar to policy core beliefs in that they are not too general (deep core beliefs) or not general enough (secondary beliefs). The divisiveness of beliefs is important because joining coalitions makes the most sense when there are actors who oppose the things you advocate. Under these circumstances, not joining hands with other actors is an invitation to defeat. Methodologically, the focus on divisive beliefs represents a bottom-up approach to finding beliefs that drive coalition formation (Gronow & Ylä-Anttila, 2019; Satoh et al., 2021). This approach contrasts with a top-down approach in which policy core beliefs are defined a priori. Whether a top-down or a bottom-up approach is useful depends on the research objectives. Since our goal is to study the effect of beliefs on coordination tie formation, we believe that the bottom-up approach is more appropriate.

The Costs of Forming and Maintaining Coordination Ties

Most studies of the relationship between belief similarity and coordination of action—the belief homophily hypothesis—are based on data from a single point in time (e.g. Matti & Sandström, 2011). An exception is Henry et al. (2021) who tested the belief homophily hypothesis with longitudinal data and found that belief homophily explains the ties between policy, which eventually leads to the segregation of the policy subsystem into separate coalitions.

Our approach starts from the insight that the beliefs that matter for coordination may change over time, which adds a further complication to the belief homophily hypothesis. As relevant beliefs change, it follows that actors should adjust their coordination ties accordingly. While actors may decide to *keep* or to *terminate* their previous ties based on belief

homophily, they may also *create* new ties with those with whom they come to share beliefs. To explore this issue, we refer to the criticism of the ACF raised by Schlager (1995), who argued that the ACF's assumption that beliefs and coordination would go hand in hand almost automatically may be mistaken because it does not take into account the costs of coordination.

We take Schlager's (1995) point further in the context of longitudinal analysis, deriving from it the assumption that the cost of maintaining existing ties is likely to be lower than the cost of establishing new ones. Consistent with this assumption, Ingold et al. (2017) show that actors having coordination ties with each other in one policy subsystem tend to do so in another, newly developing subsystem. It should also be logical that if actors coordinate action within a subsystem, they are likely to continue to do so also at a later point in time. This is in contrast to the creation of new ties, because the creation of new ties involves higher coordination costs and is therefore not as likely as the maintenance of existing ties.

Creation of New Coordination Ties

The social network analysis literature has argued that distances to unconnected actors are not uniform. Some unconnected actors are indirectly connected to each other through actors with whom they share ties, while other actors may be "unreachable" through existing ties. Furthermore, a common finding is that actors tend to form ties with unconnected actors through their existing ties (Leifeld & Schneider, 2012), because in these cases the coordination costs are lower than when reaching out to completely unconnected actors. Accordingly, relationships tend to exhibit the phenomenon of "friends of friends tend to become friends," which is called triadic closure in the social network analysis literature. We expect to observe this phenomenon also in the context of coalition dynamics in the sense that the formation of new ties depends in part on existing ties through triadic closure. If this point holds, it elaborates the ACF belief homophily hypothesis by showing that belief homophily is not the only thing that matters for coordination of action, because network mechanisms also play a role.

The Impact of Newly Divisive Issues on Coalition Structures

The points of the above discussion can be summarized in a way that links changes at three different levels, namely, *the subsystem level*, *the tie level*, and *the coalition level*. When previous policy issues become less important and new divisive issues take their place (subsystem level), this can affect coordination ties (tie level). As a result, policy actors either maintain the ties they have, or terminate them. In addition, actors may form new ties, either based on similar beliefs about the newly divisive issues in the subsystem, or by “extending” existing ties through triadic closure. From a coalition perspective, coalitions may “recruit” new members as new issues emerge to divide the policy actors (coalition level).

One implication of the tie-level processes discussed above for the coalition level is that we expect the membership and the structure of advocacy coalitions to remain fairly stable. This is because actors often seek new coalition members by expanding existing ties. Consequently, the membership of each coalition may change to some extent, but the overall structure of the coalitions is likely to remain quite stable.

Based on the theoretical expectations outlined above, we examine three interrelated research questions.

At the level of the coalition structure, we ask:

- *How does the constellation of coalitions change when the beliefs of policy actors change?*

Since potential changes in coalition structures may result from tie-level dynamics, we ask:

- *How do ties between pairs of actors change over time?*
- *Which beliefs influence the maintenance and formation of coordination ties between pairs of actors?*

We test these questions in the context of the Finnish climate policy process, which is described below.

STUDY CONTEXT: THE FINNISH CLIMATE POLICY SUBSYSTEM

We study the development of the climate change policy subsystem in Finland. In contrast to the United States, in many EU countries, including Finland, debates on climate change policy debates have not focused on a conflict between climate change denialists and science-based arguments. Previous analyses in Finland have shown a conflict between policy beliefs favoring the economy and those believing that climate change mitigation should be prioritized (Gronow & Ylä-Anttila, 2019). Thus, even those who favor the economy over climate change mitigation do not deny anthropogenic climate change. Previous research based on Finnish data collected prior to the Paris Agreement (2016) showed that there were three advocacy coalitions (data collected in 2014; Satoh, 2021). Two of the coalitions disagreed on whether climate mitigation should take precedence over economic performance, while a coalition consisting of government and research organizations was in the middle. Further analysis of the same data also showed that the boundaries between the coalitions are not always so clear, due to the relatively high density of the coordination network (Ylä-Anttila et al., 2020). The density of the network is likely an indication of the corporatist and relatively consensual context of the Finnish political system, where cooperation across political cleavages is common.

After the Paris Agreement in 2016, ambitious mitigation targets were set at both EU and national levels, and these targets made the implications of mitigation policies more concrete. The climate policy debate gradually shifted to the discussion of concrete policies to achieve the new mitigation targets. As a country where forestry has traditionally played an important role, recent Finnish climate policy debates have revolved around the extent to which deforestation threatens the role of forests as carbon sinks. Another divisive issue is the burning peat for energy, which causes a significant amount of CO₂ emissions. Actors associated with the Greens and the political left in particular have argued that peat should be phased out as soon as possible. At the same time, right-wing populists have begun to argue that Finland should not do more than other countries, are therefore a time-out is needed on both the mitigation targets and the peat phase-out.

METHODS

In the 1993 book, Sabatier and Jenkins-Smith lamented that “the analysis of long-term policy change has been greatly hampered by the lack of data sets gathered in a careful, intersubjectively reliable manner” (*ibid.*, 8). Things have improved since then, but similar problems persist. The problem is not only the difficulty of collecting longitudinal data, but also the lack of standardized measures for measuring advocacy coalitions.

We analyze data from two rounds of surveys, collected in 2014 and 2021, in which the respondents represent the policy subsystem of climate change in Finland. In the following, we refer to the time point of our first survey (2014) as T1 and the second (2021) as T2. The respondents were the main organizational actors involved in domestic climate policy, representing different sectors of society (e.g., NGOs, business, government, and academia). Individual respondents were responsible for climate or environmental issues in the organizations they represented. The same person within each organization was selected as a respondent for both rounds of the survey if they held the same position within the organization. The lists of respondents were compiled with the help of national climate policy experts and updated based on changes in the subsystem. Respondents were asked to give their opinion on the position of the organization they represented, rather than their individual opinion. The response rates were high, with 82 out of 96 organizations (85.4%) and 89 out of 104 organizations (85.6%) responding to the T1 and T2 surveys, respectively. Of these respondents, 77 responded to both rounds of the survey.

We collected data on policy beliefs by asking each respondent about their position on 33 different climate policy issues on a five-point Likert scale (strongly disagree = 1, neutral = 3, strongly agree = 5). The list of beliefs was slightly updated in the second round to reflect changes in the policy subsystem, primarily by including new questions on issues that had been publicly debated since the first survey was conducted. These issues include the role of peat and deforestation in climate change mitigation. All major divisive issues from the first round were included also in the second round of the survey. Data on the coordination of action was derived from the question “With which organizations does your organization collaborate on a long-term, reciprocal basis on climate change policy?” To answer this question, the respondents selected actors from a list of organizations representing the climate policy subsystem. This

list was identical to the list of respondents. It is possible that respondents may have interpreted the question about collaboration in slightly different ways, as we did not specify the different forms that collaboration could take. However, it is unlikely that potentially different interpretations would change between different rounds of data collection and thus affect the relationship between collaboration and policy beliefs. The main reason we chose to measure coordination of acting using a single question on collaboration was to avoid respondent fatigue; asking about different types of collaboration separately would require respondents to go through the entire list of about 100 organizations for different collaboration types. Thus, listing different types of collaboration would likely lower the response rate and result in respondents not completing the entire survey. Faced with this dilemma, we prioritized response rates because network analysis is particularly sensitive to bias due to missing responses.

Divisiveness of beliefs. The divisiveness of each belief item was operationalized by its standard deviation. The more different actor positions are on a belief item, the larger the standard deviation, and thus the more divisive the issue.

The status of ties. In our network data, a collaboration tie exists between actor i and j if actor i reports collaborating with actor j . Note that we differentiate the direction of ties (i.e., an edge from actor i to j and from j to i are treated differently). When considering changes in ties over time, for any pair of actors, there are four possible tie states between ego (i) and alter (j), *null*, *created*, *terminated*, and *kept*:

- **A. Null:** There are no ties between i and j in T1 or T2
- **B. Created:** There is no tie between i and j in T1, but a tie is created in T2
- **C. Terminated:** A tie existed between i and j in T1 but was terminated in T2
- **D. Kept:** A tie exists between i and j in both T1 and T2.

Belief homophily. Following the operationalization of our previous study (Satoh et. al 2021), we define two actors to share a belief if their score on a belief item is less than one standard deviation away from each other;

otherwise, they do not share a belief. Note that we calculate the belief homophily of a pair of actors separately for each belief item.

Triadic closure. Triadic closure measures the extent to which actors i and j who are indirectly connected through a shared tie with a third actor, k , become directly connected with each other over time. This is the mechanism by which friends of friends become friends. Because ties resulting from triadic closure are extensions of existing relationships, actors in triadic closure tend to share similar characteristics (e.g., similar beliefs). An online Appendix A lists all possible types of triadic closure in the context of our study.

Advocacy coalitions. To identify advocacy coalitions in a standardized way, we use the Advocacy Coalition Index (Satoh 2021). The index differentiates the ties of actors into those between like-minded actors and those between non-like-minded actors. A cluster analysis can then be performed on a network containing only ties between like-minded actors. To do this, we use the Louvain algorithm, which assigns nodes to clusters based on modularity, the values of which are high when the density within clusters is high and the density between clusters is low. We determine the number of coalitions in the network by modularity: we run the analysis for different numbers of coalitions and choose the solution that has the highest modularity at the whole network level. In this way, we have a common basis for comparing the coalition structures at the two time points.

Analyses were conducted using the R (R Core Team, 2019), sna (Butts, 2024), igraph and psych packages (Revelle, 2018). In the following, we first show the results on divisive questions in both survey rounds. We then proceed to the main analysis, which consists of two parts. In the first part, the units of analysis are coalitions and actors, as we analyze how coalition members and their beliefs have changed in time. In the second part of the analysis, the unit of analysis is the ties between each pair of actors. We discuss changes in divisive issues, followed by an analysis of how coalition members and their beliefs have changed over time. We then analyze changes in tie status, belief homophily, and the effect of triadic closure between T1 and T2.

RESULTS

Divisive Issues

We begin our analysis by reporting the divisive issues of the belief items analyzed (the descriptive statistics and the full result of the principal component analysis are reported in online Appendix B). In both rounds, the expansion of nuclear energy was a divisive issue with a standard deviation of 1.30 in T1 and 1.17 in T2. There were also clear differences between the two time points. In T1, divisive issues had to do with Finland's ambition in climate policy (standard deviation, $sd = 1.35$), the need for a binding climate law ($sd = 1.26$), and the extent to which national competitiveness is more important than climate mitigation ($sd = 1.18$). In T2, divisive issues relate to logging ($sd = 1.31$), peat ($sd = 1.23$), biofuels ($sd = 1.21$), and the potential of technological solutions to combat climate change ($sd = 1.17$). Based on the items that were divisive, we obtained a principal component score for each round (each score captures the variance of the original data, approximately 60% for T1 and 52% for T2).

These results suggest that prior to the Paris Agreement (T1), divisive beliefs reflected more general value priorities, but later (T2) the debate shifted to more concrete policy proposals, such as whether logging should be decreased. Thus, the content of divisive beliefs changed. It is worth noting, however, that the actors' positions on the divisive issues in T1 and T2 are correlated: the Pearson's correlation coefficient of the principal component score in T1 and T2 is 0.66 ($p < 0.001$). This means that while the disagreements have shifted to different issues, the new and more specific divisive beliefs are associated with the more general beliefs that were previously divisive.

Advocacy Coalitions

How do these changes in beliefs relate to changes in coalitions? Based on the Advocacy Coalition Index (see Methods section), we found three coalitions in both T1 and T2. We call these three coalitions the Pro-Mitigation (1), Middle (2), and Pro-Economy (3) Coalitions based on their climate policy beliefs. Table 1 shows the beliefs of the coalitions on the divisive issues in T1 and how their beliefs on these issues evolve in T2. On most issues—nuclear power is the exception—the beliefs of all coalitions converge over time. This convergence can be seen in the fact

that the average scores of the coalitions begin to lean toward either the positive or the negative side of the belief spectrum. In Table 1, such beliefs are marked with a “#.” For example, in T2 the Pro-Mitigation Coalition has become even more unanimous in believing that Finland should take a leading international role in reducing greenhouse gases (from 4.34 to 4.48). It is noteworthy that the Pro-Economy Coalition also becomes more supportive of this idea over time (from 2.33 to 3.44). A similar evolution can be observed for the other belief items, with the exception of nuclear energy. It is also worth noting that, despite the shifts in the beliefs of the coalitions, the order of the average scores in each item remains the same between the two time points. This means that the Pro-Mitigation Coalition remains the most supportive of mitigation policies, followed by the Middle and the Pro-Economy coalitions.

Table 2 shows how the composition of the coalitions in T1 relates to the coalitions in T2. Most actors remain in the same coalition (the diagonal in Table 2). This finding is particularly true for the Pro-Economy and Middle coalitions. No member of the Pro-Economy coalition moves to

Table 1 Policy beliefs related to the divisive issues at different points in time

<i>Items</i>	<i>Coalition</i>	<i>T1</i>	<i>T2</i>
# My country should take a leading international role in GHG reduction	Pro-mitigation	4.34 (0.94)	4.48 (0.39)
	Middle	3.15 (1.01)	4.15 (0.77)
	Pro-economy	2.23 (1.26)	3.44 (1.16)
	Pro-mitigation	2.17 (1.01)	2.90 (1.25)
	Middle	3.54 (0.86)	4.05 (0.74)
	Pro-economy	4.52 (0.75)	4.44 (0.61)
# National climate law requiring the reduction of Greenhouse Gases	Pro-mitigation	4.49 (0.56)	4.48 (0.77)
	Middle	3.35 (1.02)	4.15 (0.83)
	Pro-economy	2.24 (1.04)	3.22 (1.26)
# In the long term, energy supply can be secured exclusively by renewable energies	Pro-mitigation	4.63 (0.65)	4.45 (0.51)
	Middle	3.92 (1.16)	3.80 (1.14)
	Pro-economy	2.90 (1.34)	3.61 (1.39)
# National competitiveness is more important than tackling climate change	Pro-mitigation	1.74 (0.98)	1.77 (0.59)
	Middle	2.73 (0.87)	2.35 (0.67)
	Pro-economy	3.48 (0.93)	2.55 (0.82)

Note: The scale is 1 (strongly disagree) to 5 (strongly agree). Those belief items for which all coalitions begin to show either positive or negative attitudes (i.e., converging beliefs) are marked with “#”. The number of members is 35, 26, and 21 in T1 and 17, 40, and 32 in T2 for the Pro-mitigation, Middle, and Pro-Economy Coalitions. Standard deviations are shown in parentheses

Table 2 Changes in coalition membership over time (%)

(% in row)		T2			
		<i>Pro-mitigation</i> (<i>n</i> = 17)	<i>Middle</i> (<i>n</i> = 40)	<i>Pro-economy</i> (<i>n</i> = 32)	<i>[Not present in T2]</i> (<i>n</i> = 13)
T1	Pro-mitigation (<i>n</i> = 35)	40.0	37.1	11.4	11.4
	Middle (<i>n</i> = 26)	0.0	46.2	30.8	23.1
	Pro-economy (<i>n</i> = 21)	0.0	19.0	66.7	14.3
	[Not present in T1] (<i>n</i> = 20)	15.0	55.0	30.0	0.0

the Pro-Mitigation coalition but there is some movement in the other direction (11% of actors). Moreover, the majority of new actors not present in T1 are now members of the Middle Coalition. In sum, despite the fact that coalitions converge on the divisive issues of T1, the structure of the advocacy coalitions remains relatively similar over time in terms of each coalition's relative position on divisive issues and coalition members. In the next subsection, we examine how this result came about.

Tie-Level Analysis

To better understand the underlying dynamics that lead to the coalition-level outcomes, we examine how the coordination ties between pairs of actors change over time. Table 3 shows the distribution of coordination ties (including nonexistent ties) across both rounds of the survey. Interestingly, only 37% of the ties that existed in T1 remain in T2 (cell D). Among the actors that had no ties in T1, in 15% of cases ties were newly created in T2 (cell B), while in the majority (85%) of the ties are still missing (cell A). Overall, there are many changes at the tie level that are not reflected in the stability of the coalition level.

Next, we examine the association between the belief homophily of a pair of actors and the existence of a tie in T1 and T2. To do so, we focus on the probability of the existence of a tie in T2 by contrasting scenarios in which actors share or do not share beliefs. Recall that if a tie exists in T2, there are two different scenarios: either it is newly created or it is "kept" from T1. Accordingly, we distinguish between scenarios in which the ties were newly created and those in which they already existed in

Table 3 Ties between actors in T1 and T2 (%)

		Existence of ties in T2 from i to j	
		Yes	No
Existence of ties in T1 from i to j	Yes	A 84.6	B 15.4
	No	C 62.8	D 37.2

Note Capital letters correspond to the tie status as explained in the main text (i.e., A = null, B = created, C = terminated, and D = kept). N = 5,852

T1. For example, regarding the belief in the existence of climate change, among those pairs of actors whose beliefs differed and who had no ties with each other in T1, 14.6% of the possible ties (i.e., 46 out of 314 possible ties) were formed in T2. In contrast, among those actors who shared a belief in the existence of climate change, in 17.2% of cases ties were formed in T2. In other words, ties were 1.17 times more likely to be formed when actors shared a belief—positive or negative—in the existence of climate change. We repeated this calculation for each belief item to investigate which beliefs had the greatest impact on tie formation.¹

In the theory section, we outlined reasons to expect actors to coordinate their action in relation to divisive issues. The divisiveness of a belief was operationalized by its standard deviation. Accordingly, we expect belief homophily to have a large effect on tie formation for beliefs with a high standard deviation. This expectation is tested in Fig. 1, which plots the standard deviation of an item in T2 on the x-axis and the impact of belief homophily of that item on tie formation on the y-axis.

Figure 1 and the correlation coefficients confirm our theoretical expectation: actors tend to keep ties when they share beliefs on issues that are divisive in T2, whereas the impact of sharing beliefs is less important for issues that are not divisive. The more divisive an item is in T2, the greater its impact is on actors' decision to keep their ties from T1 to T2 ($r = 0.46$, $p < 0.001$). This result suggests that actors decide whether to maintain coordination ties based on the need to have allies on those issues over which there is ongoing conflict (Sabatier, 1987). It also implies that once an issue is more or less settled, belief homophily with respect to that issue is no longer important for coordination.

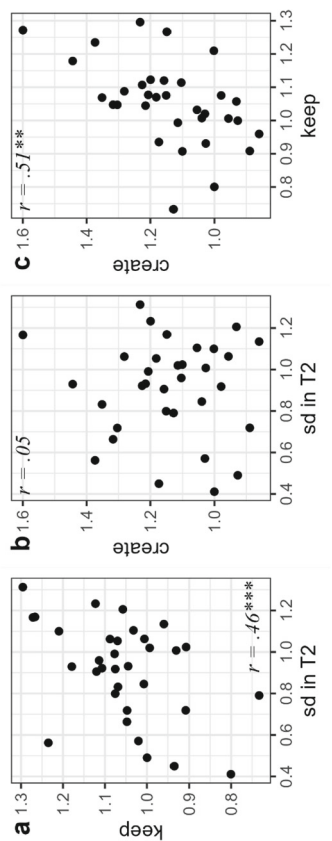


Fig. 1 Association between belief homophily on divisive issues and change in tie status. *Note:* “keep” and “create” indicate the risk ratio of respective tie status conditioned by having similar beliefs; “sd” indicates standard deviation. N = 33

Interestingly, as shown in Fig. 1b, the creation of new ties in T2 is not directly related to whether the issue is conflictual or not in T2 ($r = 0.05$, not statistically significant). This suggests that the logic of tie formation differs between maintaining existing ties and creating new ties, which is consistent with our expectations. As we have argued, creating new ties can have high coordination costs (Schlager, 1995), which means that actors need to know each other's beliefs and behaviors well in order to coordinate. Thus, even when actors share beliefs about a conflictual issue, they do not always coordinate their advocacy, presumably because of high coordination costs.

A caveat to the above interpretation is that the relationship between beliefs and new tie formation is mediated by retained ("kept") ties, as can be seen in Fig. 1c. This figure plots the effect of an item's belief homophily on kept ties on the x-axis and on newly created ties on the y-axis. The two are correlated ($r = 0.51$, $p < 0.01$). If a belief is an important driver for maintaining ties in T2, then the belief is also important for creating new ties. In other words, belief homophily is a driver for maintaining existing ties, but it may be a *result* rather than a cause in the case of newly created ties because the latter are driven by an endogenous network effect—triadic closure. Recall that triadic closure refers to the "closing" of triads in a situation where actor i is connected to k , k is connected to j , and finally i is connected to j .

Table 4 supports this interpretation. For any pair of actors i and j , the probability of forming new ties in T2 is 23%. The probability increases by about 10% if both actors were connected to a third actor k in T1. This result suggests that actors partly seek new partners by expanding the circle of their existing relationships. Since pre-existing relationships are based on belief homophily, the new actors reached through these ties tend also to be similar in their beliefs. This network effect elaborates on how the belief homophily effect operates in coalition tie formation.

Depending on the "timing" of the existence of the tie with the third actor k , the effect of the third actor can be further differentiated (see the row by subcategory in Table 4). The tie between i and k can be either kept from T1 or newly created in T2. A similar logic also applies to the relationship between k and j . Furthermore, as in the latter case, the relationship between k and j can be terminated in T2 but can still have some effect in T2, because i may have known j already in T1 through actor k . As the results show, there is variance in the effects across the subcategories. In general, the current third actor (i.e., k has a tie with j

Table 4 Probability of tie creation by different types of third actors

<i>Probability of creating a tie between ij</i>			
Base probability			0.23
Existence of third actor (average)			0.33
By subcategory of existence of third person			
Type	<i>ik</i>	<i>kj</i>	
1	Keep	Keep	0.39
2	Keep	Create	0.40
3	Create	Keep	0.40
4	Create	Create	0.40
5	Create	Terminated	0.32
6	Keep	Terminated	0.27

in T2) is more important for tie formation than a “past” third actor (i.e., *k* had a tie with *j* in T1 but not in T2) (see subcategories 1–4 compared to 5–6 in Table 4), as is logical. Nevertheless, a terminated tie with a third actor still has an effect on current tie formation relative to the base probability of tie formation.

CONCLUSION

We set out to examine the changes in policy beliefs and the resulting changes in coordination relationships and coalition structures over time. We found that in the Finnish climate policy subsystem, policy actors come to adopt increasingly favorable beliefs toward climate change mitigation during our study period. Previously divisive issues, such as the conflict between ambitious climate policy and economic growth, become less divisive. However, the newly divisive issues of peat, logging (i.e., deforestation), and biofuels become the drivers of coalition formation. It is worth noting that the newly divisive beliefs are not unrelated to the previously divisive beliefs. Many of the same actors who previously favored the economy over climate mitigation come to believe that peat, logging, and biofuels are more important than climate mitigation.

While the overall coalition structure remained similar, we found significant changes in the individual coordination relationships between pairs of actors: only one-third of these relationships persisted throughout our study period. How should we interpret these seemingly contradictory

results of changing individual ties and relatively stable coalitions at the aggregate level?

First, with respect to changes in coordination ties, while policy core beliefs are commonly thought to be the glue of advocacy coalitions, we find that the beliefs that act as a glue change over time. Once most subsystem actors agree on a belief, that belief becomes irrelevant for the coordination of action, while other divisive beliefs become important. Accordingly, ties based on the “obsolete” beliefs are terminated and new ties are formed with new coordination partners.

Second, with respect to the relatively stable overall structure of coalitions, our network analysis found that pre-existing ties function as seeds for coalition formation. Thus, policy actors form new ties in part by expanding their set of pre-existing ties based on triadic closure. This means that coalition structures at any point in time are path dependent on previous structures. This finding complements the ACF in that homophily of beliefs operates not only directly between connected policy actors, but also through the ties they share with other actors. Network effects thus help to understand how belief homophily contributes to coalition formation. Our finding of path dependencies introduced by coalition structures is novel in the ACF literature, and we hope that future research will explore this topic further.

Our results also demonstrate the usefulness of using a bottom-up, inductive method to examine which types of beliefs divide actors into coalitions (Karimo et al., 2022). Alternatively, we could have taken a top-down approach and defined only basic value priorities (i.e., the tendency to prioritize ecological vs. economic objectives) as policy core beliefs that should divide actors into coalitions. This approach would be consistent with most ACF studies that expect coalitions to be formed around policy core beliefs, which typically include basic value priorities but not beliefs about specific policy proposals, such as whether to limit logging or peat use. These latter issues are usually defined as secondary beliefs and are not assumed to be important for coalition formation. Had we taken this top-down approach, our conclusion would have likely been that the coalition structure has partially dissolved over time, because the coalitions we observed at T1 built around the ecology-economy opposition cease to exist. Instead, using the bottom-up approach, we observed that coalitions still exist, but they are now built around beliefs about specific

policy proposals in ways that are path dependent on earlier coalition structures. Thus, a different approach would have led to different and perhaps slightly misleading conclusions.

One limitation of our study is that we cannot examine how the process of belief change occurs with the organizations we study; we simply observe that beliefs in T2 are different from those in T1. While we attempted to keep the individuals responding to our survey the same between the two rounds, in some cases the person responsible for climate and/or environmental issues in the organization had changed. While changes in individuals may partially explain some of the changes in beliefs we observe, this is mitigated by the fact that we asked respondents to take the position of their organization rather than answer based on their personal beliefs. In addition, one way for an organization to change the “beliefs” it holds is to hire new people with new beliefs. For example, if an organization decides that mitigating climate change is an increasing priority for it, it may hire a new director of environmental affairs whose beliefs reflect that priority. Exactly how the collective processes of belief change occur within organizations is a topic for further research (for thoughts on how to analyze this process, see Ripberger et al., 2014).

There are at least three other potential avenues for further research based on our findings. The first avenue is to examine the extent to which our findings generalize to contexts characterized by different political institutions and different levels of political conflict. For example, it is an empirical question whether the processes we observe are similar in more conflictual policy subsystems, such as in the climate policy subsystem of the United States. At least one study of the United States suggests that a path-dependent mechanism of coalition structures may be at work there as well (Jasny et al., 2018).

Second, our study focuses on actors who can be broadly described as political elites. While we observe convergence of opinion toward a more climate-friendly position among these actors, social media evidence suggests that new resistance to ambitious climate policies is emerging among parts of the general public and in party politics (Chen et al., 2021). The right-wing populist Finns Party has not denied the reality of climate change, but it has tried to argue that Finland should not be too ambitious in its mitigation policies if larger countries do not do their share. Our elite survey may therefore paint a picture of climate policy that is less conflictual than the public the debate or party politics is in the context of climate change. On the other hand, the growing elite

consensus we observe is also reflected in party politics and public debate; most Finnish parties agree on the need for ambitious climate action, and voices opposing climate action remain relatively marginal in the public debate. Nevertheless, there is a need for research that examines the interaction of advocacy coalitions, party politics and public debate, and the role that this interaction plays in changing policy beliefs.

Third, more work needs to be done to conceptualize newly divisive issues. Our results suggest that the newly divisive issues of logging and peat are likely to be manifestations of underlying divisions related to the previous conflict between favoring either the economy or climate mitigation at the expense of the other. Conflicts over climate change mitigation versus the economy have not disappeared, but have shifted to specific policies. The issues that appear on the surface to be secondary beliefs may in fact be incarnations of policy core beliefs that divided the subsystem at an earlier point in time. How secondary beliefs build on earlier policy core beliefs is clearly an issue that needs further research.

NOTE

1. Formally, we calculated the risk ratio $\frac{P(x_{ij}=1|b_{ij}=1)}{P(x_{ij}=1|b_{ij}=0)}$ for each belief item where x_{ij} is 1 if tie exists between i and j at T2 and 0 else. Likewise, $b_{ij} = 1$ if i and j share the same belief and 0 otherwise.

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Where Advocacy Coalitions and Policy Networks Intersect in U.S. Environmental Risk Policy

Georgia Pfeiffer, Adam Douglas Henry, and Thomas Dietz

Relationships, and relationship building, are critical to the dynamics of the policy process (Koppenjan & Klijn, 2004). The structure of policy-relevant relationships that are created and maintained among policy participants—broadly referred to as *policy networks*—influence processes such as resource sharing and information diffusion (Masuda et al., 2018), policy learning (Bennett & Howlett, 1992; Heikkilä and Gerlak, 2013; Henry, 2017), and collaboration (Thomson et al., 2007). The importance of policy networks to dynamics of the policy process, and consequently, policy outcomes, is reflected in greatly increased attention in policy scholarship on the measurement, description, and modeling of policy networks within subsystems.

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While almost all theories of the policy process now engage with network concepts to some extent, policy networks have always been a core part of the Advocacy Coalition Framework (ACF). Advocacy coalitions are groups of actors that deliberately pool their resources and political influence in order to achieve a shared policy goal (Fenger & Klok, 2001; Jenkins-Smith et al., 1991; Matti & Sandström 2011, 2013; Weible et al., 2019). Advocacy coalitions are the mechanism through which individual policy participants “matter” for policy. A single person acting in isolation is politically ineffective; the same person may become effective when their influence, resources, and effort is combined with others to achieve a shared policy goal. Indeed, coalitions are of such great importance in the ACF tradition that they are used as a level of analysis for processes that are fundamentally individual, such as policy beliefs and learning. For instance, in the ACF we speak of a coalition’s belief system, or within- and between-coalition learning, even though coalitions do not have a “brain” to hold “beliefs” or update these beliefs through learning processes. This means there is a strong theoretical push toward aggregating a person’s attributes through their coalition membership—and by implication—their relationships with other coalition members. In this way, policy networks fundamentally shape the landscape of coalitions, their attributes, and resultant policy outcomes.

Despite their strong theoretical connections, however, policy networks and advocacy coalitions are distinct phenomena. Policy networks refer to the many and varied patterns of relationships that tie policy actors together, whether it is through joint coordination on policy advocacy, such as lobbying, mobilizing voters, or writing legislation, or activities that influence policy in an indirect way, such as networking at events or publishing research findings (Carlsson, 2000; Victor et al., 2016). Policy networks certainly exist within advocacy coalitions, as networks provide a mechanism for interaction and coordination among coalition participants. Moreover, network relationships that policy actors create and maintain have been used for the empirical detection of coalitions, in that dense clusters of policy actors with shared goals and intense coordination likely correspond to advocacy coalitions. However, not every tie in a policy network means that actors work together as coalition co-members.

This chapter addresses the differences between policy networks and advocacy coalitions by testing whether, and to what extent, policy-relevant interactions (networks) extend beyond the boundaries of advocacy coalitions. Two types of relationships—coalition co-membership and policy

networks—are independently measured and compared, which allows us to see where these phenomena intersect and diverge in real-world policy systems. The empirical approach relies on a study of policy actors involved in U.S. environmental risk management ($N = 281$). In this study, policy actors' network relations and coalition co-membership were measured independently, allowing for an examination of the intersection between networks and co-membership in advocacy coalitions.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

Given the strong theoretical connections between policy networks and advocacy coalitions in the ACF, network data have naturally been used for the empirical detection of coalitions. In network analysis, empirical measures such as modularity, community structure, and network segregation provide natural quantifications of coalition boundaries, membership, and structure. Suppose, for instance, that a hypothetical network of coordination among policy actors is high in *modularity*—this means that the structure of relationships tends to reveal two or more groups of actors with dense connections within the group, and sparse connections between groups (Fig. 1a). It is natural to interpret this visual landscape as two competing coalitions, where each cluster corresponds to a coalition boundary. Moreover, measurement of the policy beliefs of each actor may reveal a network that is not only modular but *segregated*, meaning that coordination relations tend to be concentrated among those with shared belief systems (Fig. 1b; open and closed nodes represent competing belief systems). Then the interpretation of the clusters as coalitions satisfies both dimensions of the ACF definition of advocacy coalitions: Policy actors who both coordinate *and* share belief systems.

This path of thinking leads to a blurring of the concepts of policy networks and coalitions. It is tempting to think of an advocacy coalition as a configuration of linkages among policy actors, and to think of a network as a map of the various coalitions that exist within a policy subsystem. The reality on the ground, however, is not so simple. Many different types of relationships make up policy networks, and relationships will exist both within and between coalitions. In the following, we consider the theoretical argument for why policy networks exist primarily within coalition, before turning to the circumstances under which we expect to observe cross-coalition networks.

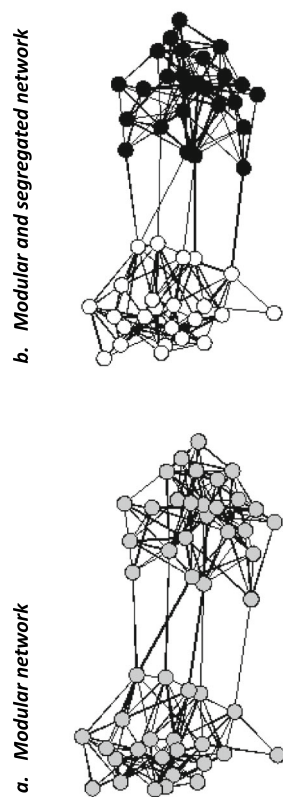


Fig. 1 Inferring coalition boundaries from network structure

The Role of Within-Coalition Networks

According to the ACF, advocacy coalitions are defined by two characteristics: first, stakeholders in the coalition share a common set of policy beliefs and second, stakeholders in the coalition engage in coordinated policy advocacy to promote those beliefs in the policy subsystem. Much of the coordinated activity represented in policy networks is expected to occur within advocacy coalitions. This is driven by a process known as belief homophily (McPherson et al., 2001), where policy participants systematically choose to form policy network ties with others who share their policy-relevant beliefs. Belief homophily arises from cognitive biases such as biased assimilation (Lord et al., 1979; Munro & Ditto, 1997; Munro et al., 2002) and devil shift (Sabatier et al., 1987), which taken together cause individuals to both mistrust and demonize others that do not share their belief systems. The result is a weakening of policy network ties among those with divergent belief systems and a strengthening of ties among those with shared beliefs. Thus, policy networks will tend to align with coalition boundaries, meaning that network ties should be concentrated within pairs of actors that both agree in terms of their beliefs, and coordinate to influence policy change.

The Role of Cross-Coalition Networks

The literature on the intersection of advocacy coalitions and other policy networks focuses on the interaction of belief congruence and coordination. As the operationalization of coordination becomes more nuanced, however, the correspondence between belief congruence and coordination tends to weaken. As we observe a full spectrum of different types of networking behavior in the policy process, belief homophily does not explain the structure of every type of relation. In other words, many types of different network relations exist within subsystems, and not all of these relations advance policy advocacy. Thus certain networks may exist both within and across coalitions.

In studies that relate belief congruence to a general, uni-dimensional concept of coordination, a strong relationship emerges between coordination and belief congruence (Henry, 2011; Matti and Sandström 2011, 2013). Another set of studies (Weible, 2005; Weible & Sabatier, 2005) differentiates general coordination from ties used to ask for information and advice. In these studies, there is a weaker relationship between belief

congruence and information/advice ties than between belief congruence and general coordination ties. Lastly, one study (Stritch, 2015) offers a fully multi-dimensional concept of coordination, where coordination is broken down into distinct and specific activities such as providing information and cooperating on joint policy research or analysis. In this case, higher level coordination (such as cooperating on joint policy research or analysis, jointly funding some advocacy costs, participation in task forces or workshops, joint presentations to government agencies, holding joint strategy meetings, and creating a formally structured coalition) was more closely associated with belief congruence than lower level coordination (such as providing information, receiving information, and encouraging other organizations to participate). The trend in the literature hints at the possibility that coordination outside of coalitions is stronger than expected when the concept of coordination incorporates more nuance about the specific types of activities.

To reconcile advocacy coalitions and policy networks, it is therefore necessary to consider how overlap in these concepts may vary as a function of the type of coordination being considered. This subject needs clarification across the policy process literature. The multi-dimensional treatment of coordination used by Stritch (2015) is not commonly seen in ACF literature and provides an important tool to bring better resolution to the discussion of coordination. Also, work in this area generally compares coordination between partners to their belief congruence instead of comparing coordination to coalition membership. Rather than use belief congruence alone, we introduce a more robust definition of coalitions by including the requirement that stakeholders engage in coordinated policy advocacy.

STUDY CONTEXT

The context of this empirical study is the U.S. environmental risk policy subsystem. The origins of this subsystem reach back to the 1970s in the United States, when the U.S. Congress passed a series of bills in response to increasing public concern about environmental conditions. These included the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act (US Environmental Protection Agency, 2018). This increase in legislation set the stage for formal risk analysis to be introduced into environmental policy. In 1976, the Environmental Protection Agency

(EPA) issued its first formal guidelines for cancer risk assessment (Sandia National Lab, 1994), starting the mainstream use of risk assessment in policy making and marking the first emergence of a U.S. environmental risk subsystem. Risk management was further ingrained in public agencies when, in a precedent-setting 1980 decision, the U.S. Supreme Court ruled that the Occupational Safety and Health Administration (OSHA) must provide an estimate of the actual risk associated with exposure to benzene when setting standards (Sandia National Lab, 1994). In addition to policy movements toward formal risk assessment, leadership within the subsystem was signaling a change in priorities that emphasized risk assessment. In 1983, William Ruckelshaus started his second (non-consecutive) term as EPA administrator by giving a speech on formal risk analysis in federal policy making (Ruckelshaus, 1983). The speech underscored the growing importance of formal risk analysis as a path to legitimacy in the policy sphere (Dietz & Rycroft, 1987).

Since that point, the U.S. environmental risk subsystem has encompassed major debates on topics ranging from nuclear energy to the clean-up of the Chesapeake Bay. These types of specializations constitute smaller policy subsystems nested within our case study. Subsystems, as defined by the ACF, can be both nested and overlapping (Jenkins-Smith et al., 2014), and the U.S. environmental risk subsystem is no exception. In addition to encompassing many specializations, the environmental risk subsystem frequently overlaps with other substantive areas. For instance, the social justice movement dovetails with environmental risk to create policy intended to redress previous unfair practices—such as the direction of federal and state funds to clean up the polychlorinated biphenyls (PCB) landfill in Warren County, North Carolina nearly 20 years after protests occurred there (US Environmental Protection Agency, 2017). There is also overlap with the workplace safety subsystem which shares concerns over incidents like the Deepwater Horizon oil rig explosion that killed 11 workers and spilled crude oil into the Gulf of Mexico (US Environmental Protection Agency, 2018).

Focusing on this subsystem provides several contextual advantages. Environmental risk spans many subfields and incorporates the work of a diverse array of policy participants. Working with such a broad subsystem allows us to capture coalition ties from multiple smaller, nested subsystems. Large organizations and federal government agencies are especially likely to be involved in multiple policy subfields and this wider view

can better capture their involvement across many different issues of environmental risk.

METHODS

This chapter is based on survey data collected from participants of the U.S. environmental risk subsystem circa 2015, in a replication of earlier surveys of the same subsystem (but different participants) conducted in 1985 and 2000 (Dietz & Rycroft, 1987; Henry et al., 2020). Policy participants, individuals whom we refer to as “risk professionals,” meet three criteria: (1) risk professionals engage in one or more professional activities focused on policy making surrounding risk issues, (2) risk professionals work in one or more substantive issues of environmental risk, and (3) the individual’s professional activities are meant to influence or inform on U.S. federal policy or decision making. Substantive areas of environmental risk include climate change, natural resource management, water or food supply, water quality, air quality, toxins in the environment, energy use or production, natural hazards, and nuclear safety. Since many respondents work on multiple policy issues, the third criterion does not indicate that respondents work exclusively at the federal level; some respondents also participate in state and local policy issues.

Risk professionals are also involved in a wide range of policy activities. The survey includes professionals producing policy-relevant knowledge (such as researchers at universities and think tanks), professionals from purposive groups (such as advocates in environmental and public health non-profits), and professionals involved in policy implementation (such as state and federal employees). This inclusivity gives us access to a broad range of experiences in the policy subsystem. Overall, the sample reflects the broad scope of issues and actors engaged in environmental risk policy.

Data for this chapter were gathered through a snowball sample of risk professionals. The initial sample was drawn from three sources: published records of Congressional hearings focused on issues of environmental risk, published reports from National Research Council (NRC) committees focused on issues of environmental risk, and stakeholders affiliated with events sponsored by the Society for Risk Analysis. During the survey, each respondent was asked who they work with within the subsystem and these nominations were then used to expand the initial sample. Overall, 281 respondents responded to the survey out of 914 invitations, yielding an overall response rate of 30.7%. The risk professionals represent the public,

private, and non-profit sectors and span a wide range of policy topics within environmental risk.

Policy Network Measurement

Survey respondents were asked to nominate up to ten organizations they have contact with in the development of science and/or policy surrounding issues of environmental risk. Once this initial list of contacts is established, respondents provide information on their specific interactions with each contact. Respondents were whether they shared one of nine particular types of policy-relevant coordination with each contact, including:

- jointly advocate for policy,
- jointly implement programs or policies,
- write joint publications,
- seek/provide funding or physical resources,
- engage in joint research,
- seek/provide consulting services,
- seek/provide advice,
- attend the same meetings, and
- share information or data.

These nine types of coordination range from low-risk activities such as attending the same meetings to high-risk activities such as jointly implementing programs and policies.

Advocacy Coalition Measurement

Coalitions are measured as pairwise interactions with specific partners rather than measuring coalitions as groups of stakeholders. This is a useful approach for conceptualizing coalitions because stakeholder decisions are the basis for coalition building. By analyzing ties at this level, we can more directly analyze the ways in which single actors coordinate with their partners. Coalition ties occur when stakeholders share beliefs and coordinate on policy issues with their contacts. This conceptualization is consistent with the ACF's preference for modeling a complex and

nuanced individual and allowing coalition dynamics to arise from individual propensities. We look to individuals' networks to find the contacts that are coalition partners.

Within-coalition relationships were identified as the overlap between two particular types of relations measured in the survey: (1) sharing policy goals, and (2) jointly advocate for policy. Cumulatively, the 218 responses used for analysis listed 1,551 contacts, for an average of just over 7 contacts per respondent. Of the 1,551 contacts measured in the survey, 671 were reported to share policy goals with the respondent and 352 were reported to jointly advocate for policy with the respondent. The intersection—that is, ties that included both sharing policy goals and policy advocacy—included 265 relations. In other words, of the 1,551 contacts measured in the survey, roughly 17% are viewed as within-coalition ties. This translates into approximately 1.2 coalition ties per respondent, on average.

FINDINGS

Social network analysis (SNA) is used to look at the interaction of coalitions with each of the types of collaboration measured in the survey. Networks serve as an abstraction of social interactions where network nodes represent the actors and the ties between them represent various types of policy-relevant relations. Representing relationships in mathematical models provides insight into the actors' preferences for relationship formation. SNA provides an opportunity for us to study actor-level decisions as well as the constraints of network position and the larger context in which actors participate (Borgatti et al., 2013). All analysis was carried out using the R Statistical Package (R Core Team, 2018) and the following associated packages: ggplot2 (Wickham, 2016), VennDiagram (Chen, 2018), igraph (Csardi & Nepusz, 2006), and plyr (Wickham, 2011).

In network analysis terms, the data are a sample of *egocentric networks* and thus analyzed using techniques from SNA that are appropriate for the study of such structures. In egocentric networks, the focal node is called the ego, and the ego's connections are called alters. In our data, each respondent is an ego and the organizations that they nominate as contacts are the alters. Each respondent in our dataset has a different egocentric network for each kind of coordination that is addressed in the survey. For instance, the two network graphs in Fig. 2 are egocentric

networks for the same respondent for different network types. The ego is represented by the node in the center of the graph. The respondent listed 10 organizational contacts, represented by the nodes encircling the ego. The contacts represented by square nodes are coalition partners with the ego (discussed below), while the contacts represented by circles are not. The graph on the left shows ties where the respondent reported seeking or giving advice and the graph on the right shows ties where the respondent reported jointly implementing programs or policies.

To find the relationship between policy networks and coalitions, we examine the proportions of coordination ties that coincide with coalition ties. For example, we see that four contacts in Fig. 3 are coalition partners (the square nodes in each graph). In the advice graph, two out of six advice ties are with coalition partners while four advice ties are not to coalition partners. Thus, the proportion of advice ties that coincide with coalition ties is $2/6$, or about 0.33. In the implementation graph, three out of four coordination ties, or a proportion of 0.75, coincide with coalition partners. For each respondent, the egocentric coordination networks are compared the egocentric coalition network to find the proportion of the coordination ties that coincide with coalition ties. For each coordination network, Table 1 records the average number of ties for each respondent, the average proportion of those ties that are found in coincidence with coalition ties and the average proportion of ties that do not coincide with coalition ties. Note the last two columns will always sum to 1.

Figure 3 shows the mean proportion of each network type that coincides with coalitions. For instance, sharing information has mean proportion overlap of 0.18; on average, we see almost 20% of information sharing ties go to coalition partners. For comparison, implementing programs and policies has a mean proportion overlap of 0.31; on average we see just over 30% of joint implementation of programs and policies occur within coalitions. The error bars represent 95% confidence intervals around the mean proportion.

From this analysis, two results are of particular interest. First, and surprisingly, we find that the majority of ties in every coordination type occur without an accompanying coalition tie. This is a marked departure from the perspective of the ACF which expects coordination to be concentrated within coalitions. Second, we see that types of coordination are heterogeneous in their relation to coalitions. We explore this

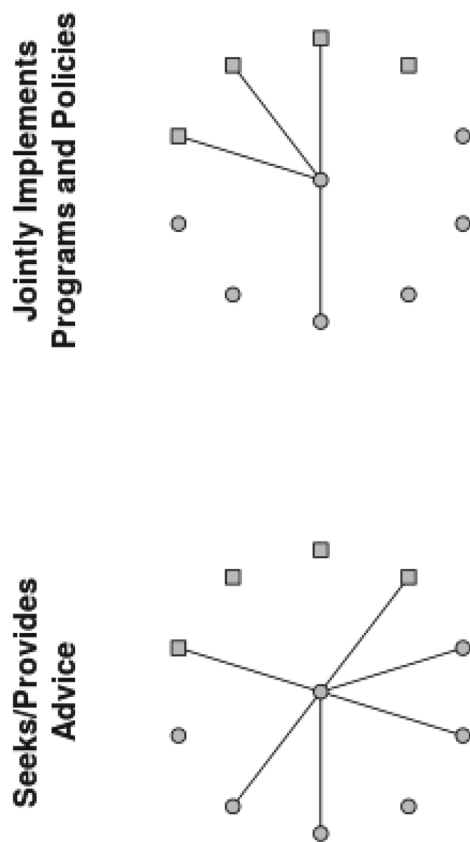


Fig. 2 Ego-centric networks representing advice and implementation relationships

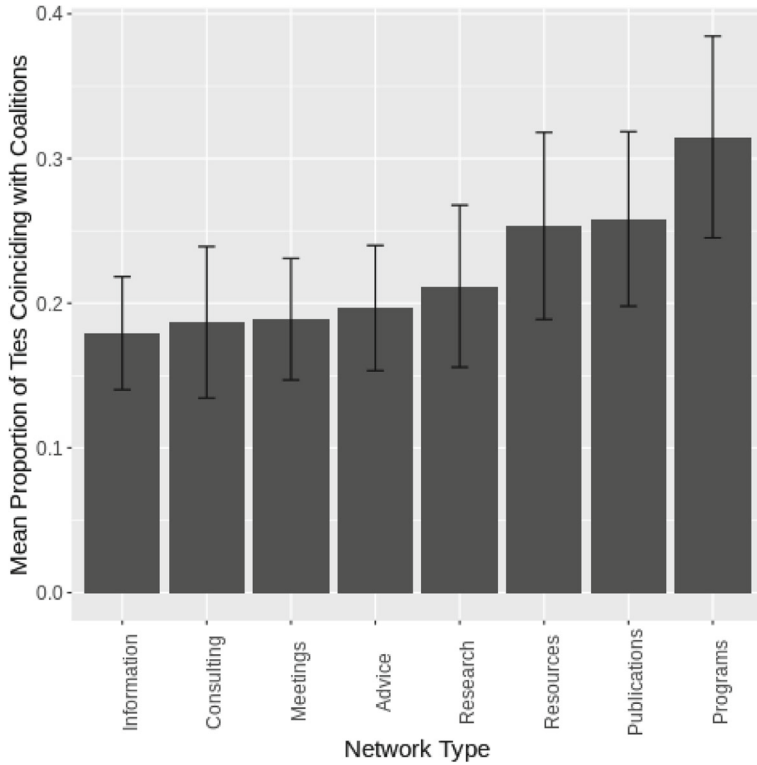


Fig. 3 Mean proportion of coincidence between eight types of coordination ties and coalition co-membership

further using an analysis of variance (ANOVA) and the Tukey Honestly Significant Differences test to look for significant differences in behavior.

Each type of coordination has a distribution of proportions—one proportion for each survey respondent. First, these distributions are compared via an ANOVA to test the null hypothesis that the mean proportion of coordination ties in coincidence with coalition ties is the same across coordination network types. We reject the null hypothesis that the means, shown in the first column of Table 1 (mean proportion within coalition), are equal with a p-value of 0.005.

Next, the Tukey Honestly Significant Difference test (HSD) is applied to find which pairs of networks are significantly different from each other.

Table 1 Proportions of coordination within and between coalitions

	<i>Mean degree (Std. Dev.)</i>	<i>Mean proportion of coordination ties that correspond with coalition ties</i>	<i>Mean proportion of coordination ties that do not correspond with coalition ties</i>
Share information or data	5.00 (3.55)	0.18	0.82
Seek/provide consulting services	2.28 (2.77)	0.19	0.81
Attend the same meetings	4.81 (3.35)	0.19	0.81
Seek/provide advice	4.38 (3.36)	0.20	0.80
Engage in joint research	2.17 (2.48)	0.21	0.79
Seek/provide funding or physical resources	2.13 (2.58)	0.25	0.75
Write joint publications	1.89 (1.80)	0.26	0.74
Jointly implement programs or policies	1.88 (2.33)	0.31	0.69

The Tukey HSD test allows us to make multiple pairwise comparisons of the mean proportions without the risk of inflating the Type I error rate. The Tukey HSD test shows that the incidence of programs co-occurring with coalitions is significantly different at the 0.05 level from the incidence of information, consulting, meetings, and advice co-occurring with coalitions.

In addition to treating each mean separately, we can group them into types of coordination. From the Tukey HSD test, we see that implementation of programs and policies is different from the four types of coordination with the lowest means. Looking at Table 1 or Fig. 3, the next largest difference between categories occurs between jointly conducting research and sharing resources. Breaking the types of coordination into categories here is a post-hoc decision, but this also results in a theoretically interesting set of categories. The types of coordination

with lower coincidence with coalitions—information, consulting, meetings, advice, and research—represent activities that carry fairly low risk to an organization. Jointly participating in these activities does not cause organizations to bear a heavy cost to their reputation if their partner fails. The group with higher coincidence with coalitions—resources, publications, and programs—represents activities where organizations have invested more in the success of the joint activity. These activities produce outcomes, such as publications and programs, where cooperating organizations will be difficult to distinguish from one another. Sharing resources is in the high-risk group because of the potential cost to the organization if this type of relationship fails.

Performing an ANOVA on the proportions of coordination coincidence with coalitions between low-risk and high-risk activities, our results support the view that these are two distinct categories ($p\text{-value} = 0.06$). It seems that stakeholders organize their coordination more within their coalitions when that coordination is high risk and are comparatively more comfortable taking part in low-risk activities outside of the coalition.

CONCLUSION

We set out to explore to what extent policy networks overlap with shared coalition membership. We found that the majority of coordinated policy-related activities take place outside of coalitions. While this phenomenon was seen across all types of coordination, we found variation in the degree of the result between types of coordination. The results from the Tukey HSD test show significant differences between the most highly constrained type of coordination (jointly implementing programs and policies) and the four types of coordination with the lowest coincidence with coalitions (share information, seek/provide consulting services, attend the same meetings, and seek/provide advice). Further analysis suggested a difference between low- and high-risk coordination when it comes to coalition constraints. Taken together, this evidence shows that there is far more coordination outside of coalitions than expected by the ACF and that the extent of coordination outside of coalitions is heterogeneous across types of coordination.

ACF research would benefit from distinguishing between varied types of coordination, and greater attention to the role of coordination between coalitions. These data show a robust professional network that exists in addition to policy advocacy coalition; the role of this extensive network on

policy processes and outcomes should be taken seriously. For practitioners wishing to encourage coordinated behavior across a policy subsystem, these results suggest that low-risk activities, such as information sharing, may be an easy and safe way to begin relationships that may support future higher-risk relationships.

While coordination may be more accessible across coalitions than previously believed, these results also show that working together does not necessarily lead to agreement on policy issues. In this case study, coordinated activity is often found without policy agreement. Future research may address whether coordination on projects with opponents leads policy actors to be more open to compromise on policy issues even when their beliefs do not change.

By using a dataset that spans stakeholders from multiple organizational sectors, functional domains, and types of jobs, this study reflects the complex and networked character of real policy systems. We find that stakeholders frequently reach outside of their coalition to coordinate on policy-related activities and that that coordination is related to the types of activities and the substantive focus of the stakeholder. These findings add nuance to the ACF's concept of coordination as a phenomenon that holds coalitions together, but also spans entire subsystems and crosses boundaries of policy advocacy.

Final Thoughts

This chapter contributes, theoretically, to the broader ACF literature on the prevalence of coordinated activity outside of coalitions and, methodologically, on the conceptualization of coalitions as networks. The considerable coordination outside of coalitions—particularly coordination on low-risk activities—questions an implicit assumption made in many policy studies: that policy advocacy is the primary activity of subsystem actors.

By explicitly looking at coordination outside of coalitions, we create a broader conceptualization of what it means to be an active policy stakeholder. Stakeholders engage in a variety of activities, many of which are not directly contributing to their advocacy efforts. We also contribute to the ACF by reexamining the conceptualization of coalitions. We conceptualize coalitions as networks of loosely organized stakeholders instead of tightly connected groups. This perspective works well for studying coalition ties in a broad subsystem, such as the management of environmental

and technological risks, where we see many opportunities for smaller, more topically focused groups of policy actors.

From a practical standpoint, this research could be extended to investigate interventions that can promote better flows of information and resources. We found that risk professionals were more likely to take part in low risk rather than high risk-coordinated activities across coalition boundaries. Given that belief segregation in policy networks can limit the flow of information and opportunities for compromise and other collaborations, more applied research could investigate ways to leverage low-risk interactions into opportunities for more meaningful work. This avenue for future work would be relevant to practitioner needs and, if successful, could provide post-hoc intervention to improve communication and resource sharing in segregated policy networks.

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Advocacy Coalitions ‘In Power’ and Major Policy Change in Canada: A Fuzzy Set Investigation

B. Timothy Heinmiller

Sievers and Jones (2020) argue that theories of policy change must grapple with the concept of power and its role in policy-making. ACF policy change theory (PCT) addresses power most directly in its second hypothesis which posits a causal link between advocacy coalitions ‘in power in a jurisdiction’ and major policy change. This posited relationship stems from the earliest versions of the ACF but has not received much attention from ACF policy change scholars. They have generally preferred to investigate the first policy change hypothesis identifying various pathways that alone, or in combination, can lead to major policy change (Jenkins-Smith et al., 2018, p. 147).

This chapter focuses squarely on advocacy coalition power and major policy change, as posited in the second policy change hypothesis. A fuzzy set approach is developed for investigating when status quo advocacy coalitions are ‘in power in a jurisdiction’ and the approach is piloted using six cases of major policy change in Canada. Ultimately, five of the six cases are found as consistent with the second policy change hypothesis, but one case is clearly inconsistent. The methodology and findings raise important

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questions about the conceptualization, measurement, and theorization of power in PCT.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

As outlined in the introductory chapter of this volume, ACF PCT is comprised of two hypotheses: the first (H1) is commonly known as the ‘pathways’ hypothesis, and the second (H2) has been described as the ‘power’ hypothesis. While H1 has been widely studied, including an innovative study by Fullerton et al. in this volume, H2 has been studied far less frequently and has generated less empirical knowledge. Accordingly, in their assessment of the PCT literature, Jenkins-Smith et al. (2018, p. 147) report that there is “strong support” for H1 but “strong to partial support” for H2, further cautioning that H2 has been tested only a few times. Moreover, in their review of the PCT literature, Pierce et al. (2020) largely overlook H2, focusing on the four policy change pathways in H1 and treating policy imposition (from H2) as a fifth pathway. Findings about the relationship between status quo advocacy coalitions ‘in power’ and major policy change are not compiled or considered in their analysis.

A subsequent literature review identified only 13 studies of “advocacy coalitions in power” between 1998 and 2021 (Heinmiller, 2023). Eleven of these studies supported H2 and two studies, by Freudenberg and Gramling (2002) and Anderson and Maclean (2015), did not. Confidence in this (un)supportive evidence should be tempered given that most studies did not collect evidence based on a formal operationalization of the concept. Only two studies, by Montefrio (2014) and Heinmiller et al. (2021), specified operational definitions of what it means for an advocacy coalition to be ‘in power in a jurisdiction.’ Power is a long-contested, complex, and multi-dimensional concept (Lukes, 2005; Riker, 1964) and the ACF has been justifiably criticized for under-conceptualizing it (Olsson, 2009). This chapter does not resolve all the ACF’s conceptualization issues pertaining to power but has the more modest goal of developing an operational definition of advocacy coalitions ‘in power in a jurisdiction’ to facilitate empirical testing of H2.

In previous work, I have argued that an advocacy coalition should be considered ‘in power’ based on its relationship(s) with veto player(s) in a jurisdiction’s policy process (Heinmiller, 2023). When an advocacy coalition has a veto player as a member, it can vicariously veto policy

changes that threaten shared policy core beliefs. This puts an advocacy coalition in a very powerful position, and there is a threshold difference between advocacy coalitions that can wield a vicarious veto in policy processes and those that cannot (Sotirov & Winkel, 2016). This is consistent with earlier work by Nohrstedt (2011, p. 480) who argued that “[w]hen seeking to explain why public policy programs change, formal legal authority should enjoy unique status compared with other political resources because legislators are veto players whose agreement is needed for policy change.”

In this thinking, the advocacy coalition that instated the policy status quo is ‘in power in a jurisdiction’ if it has sufficient influence over a veto player to wield a vicarious veto in the jurisdiction’s policy process. A status quo coalition has most influence over a veto player when a veto player is a coalition member sharing policy core beliefs and collaborating to protect them. A coalition’s influence is less obvious when a veto player is not a member of any advocacy coalition but is successfully pressured or persuaded to uphold the status quo coalition’s policy core preferences. There are also instances in which collective veto players, such as political parties, may be internally divided on supporting a status quo coalition’s policy core beliefs, affecting the coalition’s ability to wield a vicarious veto (Heinmiller, 2023). So, while there is a categorical difference between advocacy coalitions that can and cannot call on a vicarious veto, there are differences of degree between these categories that make it challenging to operationalize. One way of addressing this challenge is to operationalize status quo coalitions ‘in power’ as a fuzzy set.

STUDY CONTEXT

The proposed fuzzy set is developed and tested using six cases of major policy change in Canada over the past 30 years, including the Canadian *Firearms Act* (1995), the Alberta *Water Act* (1996), Ontario’s ‘Brian’s Law’ (2000), the Ontario *Greenbelt Act* (2005), the Canadian *Ending the Long-gun Registry Act* (2012), and the Canadian *Cannabis Act* (2018). Overviews of these policy changes, and the changes in policy core attributes qualifying them as major policy changes, are provided in Table 1. Since these cases involved major policy changes, they fall within the scope of H2. No cases involved policy imposition by a hierarchically superior jurisdiction, holding this H2 variable constant so that

the other H2 variable—a status quo coalition no longer ‘in power in a jurisdiction’—is causally isolated.

The major policy changes investigated in this study all took place in majority government situations characterized by a single veto player. Canadian federal and provincial governments are Westminster parliamentary systems in which single-party majority governments are most common. None of the provincial legislatures have upper houses, so, in majority legislatures, there are no veto players other than the governing party. The Canadian Senate, the upper house of the Canadian Parliament, has formal veto power in the federal legislative process but constitutional

Table 1 Summary of the case set

Canada: *Firearms Act* (1995)

Introduced universal licensing of firearms users and universal registration of firearms in Canada. The latter required the registration of millions of previously uncontrolled firearms, such as rifles and shotguns, with penalties for those who failed to register. The act also increased the penalties for some violent gun crimes (Brown, 2012, Heinmiller & Hennigar, 2022)

Alberta: *Water Act* (1996)

Allowed for the trading of water licences in southern Alberta for the first time. It also allowed for the introduction water licensing moratoria in over-allocated river basins, and water licensing caps in river basins not yet over-allocated. Conservation holdbacks were introduced, allowing for up to 10% of each water trade to be re-allocated for conservation purposes (Percy, 1996, Heinmiller, 2016)

Ontario: “Brian’s Law” (2000)

Named after sportscaster Brian Smith, who was killed by a mentally ill assailant in 1995, this legislation allowed for community treatment orders for people released from psychiatric facilities. Community treatment orders outline a mandatory treatment program and those subject to them can be re-institutionalized if they do not follow their required program (Carver, 2002, Swigger & Heinmiller, 2014)

Ontario: *Greenbelt Act* (2005)

Designated 8,094 km² of greenspace around the Greater Golden Horseshoe (i.e., greater Toronto) as preserved for agricultural and environmental purposes. Construction and development are tightly restricted within the Greenbelt area (Pond, 2009, Heinmiller & Pirak, 2017)

Canada: *Ending the Long-gun Registry Act* (2012)

Ended the requirement to register long-guns (rifles and shotguns), the most owned firearms in Canada, reversing a requirement brought in the 1995 *Firearms Act* (see above). The records of the existing gun registry were also destroyed so they could no longer be used by police (Heinmiller & Hennigar, 2022)

Canada: *Cannabis Act* (2017)

Legalized the growth, sale, and consumption of (regulated amounts of) recreational cannabis in Canada, activities that had been criminalized since 1923 (Wesley, 2019)

convention dictates that it generally follow the will of the elected House of Commons. So, it is not a veritable veto player and majority parliaments typically have only one veto player, the governing party (Stepan, 2004). Selecting cases of major policy change enacted during majority governments provides cases with just a single veto player, facilitating a focus on fuzzy set operationalization without having to decipher the complex veto player configurations that occur in minority governments.

Within the parameters of major policy change during majority governments, cases were selected to maximize their diversity by including both federal and provincial cases and by including cases from several policy sectors. Canada is one of the most decentralized federations in the world, so including both federal and provincial cases is more representative of Canadian policy processes than focusing on the federal government alone (Dardanelli et al., 2019). The cases also encompass five different policy sectors, as described in Table 1, capturing some issue diversity in Canadian policy-making (Gerring, 2007, pp. 97–101). The specific cases are drawn from my long-term research program on advocacy coalitions and Canadian policy-making so that existing data on policy core beliefs and advocacy coalitions could be utilized.

METHODS

As defined by Ragin (2008, p. 30, emphasis in original), “[a] fuzzy set can be seen as a continuous variable that has been *purposefully calibrated* to indicate degree of membership in a well-defined and specified set.” A ‘set’ is a group of cases sharing a categorical characteristic, and a fuzzy set analysis can investigate which cases are fully in a set, fully out of a set, and partially in (partially out of) a set. The extent of set membership is expressed on a 0 to 1 scale, with 0 indicating full non-membership and 1 indicating full membership. The membership scores are truth values, not probabilities, and they express how true it is, given current evidence, that a case has set membership.

It is proposed here that cases in which a status quo coalition is ‘in power in a jurisdiction’ constitute a set; in this set, status quo coalitions have sufficient influence over a veto player to wield a vicarious veto in policy decision-making. Membership in the set indicates that a status quo coalition is ‘in power,’ and non-membership indicates that it is not. Importantly, in cases of major policy change, such as those examined here, cases outside this set support H2, while cases inside this set do not.

It is further proposed that set membership be measured with two continuous variables: 1) the extent of alignment between status quo coalition policy core beliefs and veto player policy core beliefs (termed congruence); and, 2) the extent of alignment with status quo coalition policy core beliefs among individuals comprising a collective veto player (termed coherence). The concepts of congruence and coherence are borrowed from the veto players literature but take on slightly different meanings here (Tsebelis, 1995, Tsebelis, 2002). Cases in the set are those with high truth values for both congruence and coherence: the policy core beliefs of the veto player must be closely aligned with those of the status quo coalition (high congruence), and there must be enough individuals in a collective veto player with status quo policy core beliefs to allow a veto to be exercised (high coherence).

In the fuzzy set, congruence refers to the extent of alignment between status quo coalition policy core beliefs and veto player policy core beliefs. The more congruence between a veto player (as a collective) and a status quo coalition (as a collective), the closer their policy core beliefs, and the more influence a coalition will have in wielding a veto to protect these beliefs. High congruence situations are likely to be those in which a veto player is a member of the status quo coalition. The veto players in this study are political parties and these collective actors are treated as unitary in assessing congruence. Political parties' collective policy core beliefs were found in primary source documents such as party election platforms, budget speeches, speeches from the throne, party policy convention resolutions, and ministerial speeches introducing legislation. Status quo coalitions' policy core beliefs were available in existing data from previous studies.

Congruence data collection focused on veto players' policy core beliefs and involved content analyses of parties' primary source documents. Policy core beliefs were conceptualized as actors taking positions on policy concepts, following Leifeld's (2013) approach. The salient policy concepts in each case were identified from existing studies and used as coding categories. Lists of keywords indicating each policy concept were developed and the primary sources were computer-searched for these keywords. Passages containing keywords were copied and pasted into coding sheets, as shown in Online Appendix A (the keywords are bolded in the appendix). The coding sheets provided synopses of veto players' stated positions on salient policy concepts, in their own words.¹ Veto player positions aligning with those of the status quo coalition were

identified as congruent beliefs and contrary positions were identified as incongruent beliefs. If either actor's position on a policy concept was unclear or unknown, their congruence was identified as unknown.

Because some policy concepts were more salient than others, congruence on highly salient concepts was weighted more heavily than congruence on less salient ones in assessing overall congruence. To weight the relative salience of policy concepts, the legislative debates in each case were computer-searched for the same lists of keywords used in the content analyses. Assuming that more frequently mentioned policy concepts are more salient, the total number of keyword hits for each concept was summed and each concept's weight was calculated as its share of total keyword hits in each case. The weights of congruent policy preferences were summed to determine the overall weighted congruence between status quo coalitions and veto players, with values closer to 1 indicating greater congruence. These operations are also included as part of Online Appendix A.

The weighted congruence values were then transformed into set membership scores. Using the direct method of calibration, the fuzzy set was calibrated so that a weighted congruence score of 0 represented full non-membership in the set, 1 represented full membership in the set, and 0.5 represented the point of maximum ambiguity. The standard formula² was used to transform weighted congruence scores into the set membership scores shown in the second column of Table 2 (Ragin, 2008, pp. 89–94).

In the fuzzy set, coherence refers to the extent of alignment with status quo coalition policy core beliefs among individuals comprising a collective veto player. Even if a status quo coalition and a veto player are highly congruent, coalition influence is undermined to the extent that there are dissident members within a collective veto player. Thus, the more coherence, the more likely the status quo coalition has sufficient influence to wield a vicarious veto. Coherence was calculated as a percentage: the percentage of elected governing party legislators aligned with the status quo coalition as a proportion of the number of legislators needed to exercise a veto. The higher the percentage, the more likely that coherence was present.

Some assumptions were made given the nature of Canadian Westminster government. It was assumed that the policy core beliefs of veto player members (i.e., governing party legislators) were—by default—those of the collective veto player (i.e., the governing party) unless there was evidence

Table 2 Fuzzy set results

<i>Cases</i>	<i>Congruence</i>	<i>Coherence</i>	<i>Status quo coalition influence over veto player (lowest score)</i>	<i>Status quo coalition influence over veto player (mean score)</i>	<i>Is H2 supported?</i>
CA <i>Firearms Act</i> (1995)	0.16	0.23	0.16	0.20	Yes
AB <i>Water Act</i> (1996)	0.94	0.96	0.94	0.95	No
ON ‘Brian’s Law’ (2000)	0.05	0.03	0.03	0.04	Yes
ON <i>Greenbelt Act</i> (2005)	0.16	0.03	0.03	0.10	Yes
CA <i>Ending the Long-gun Registry Act</i> (2012)	0.08	0.03	0.03	0.06	Yes
CA <i>Cannabis Act</i> (2018)	0.00	0.00	0.00	0.00	Yes

of dissent. This assumption can be made because political parties tend to coalesce around shared beliefs and because legislative support for these beliefs is enforced in Canada through strong party discipline and the constitutional confidence convention (Franks, 1987).

The calculation of coherence varied according to the presence of congruence/incongruence in a case, as summarized in Fig. 1. In cases of evident congruence, coherence was calculated as the total number of governing party legislators minus the number of governing party dissenters, as a proportion of the number of legislative votes needed to veto. In cases of evident incongruence, coherence was calculated as the total number of opposition party members plus governing party dissenters, as a proportion of the number of legislative votes needed to veto. The assumptions and calculations are specific to the veto player configuration in Canadian majority government and would have to be adapted for other veto player configurations. All data used in the calculations are available in Online Appendix B.

Calculating coherence depended on identifying the number of governing party dissidents on a policy issue, and this was challenging due

In cases of congruence... $= \frac{(\# \text{ of governing party votes} - \# \text{ of governing party caucus dissenters})}{\# \text{ of votes needed to veto legislation}} \times 100$
In cases of incongruence... $= \frac{(\# \text{ of opposition party votes} + \# \text{ of governing party caucus dissenters})}{\# \text{ of votes needed to veto legislation}} \times 100$

Fig. 1 Calculating coherence

to Canadian norms of caucus solidarity and confidentiality. With caucus surveys unviable, estimates were made using the public record. A low range estimate of caucus dissent was the number of veto player caucus members who voted against their party during legislative votes. This is a low range estimate because voting against one's party comes at a high personal political cost so only the strongest dissenters are likely to do this. A high range estimate of caucus dissent was identified through contemporaneous media accounts of caucus dissent. In Canada, caucus dissent is an exceptional and newsworthy event (Franks, 1987). So, for each case, the Canadian Business and Current Affairs periodical database was searched for the title of the bill in question and the keyword "caucus." All search results were reviewed with the highest reported number of dissenting caucus members (if any) used as the estimate. This is a high range estimate of caucus dissenters because objecting to a bill in caucus comes at a relatively low personal political cost, so mild dissenters are more likely to do this, even if they don't vote against a bill. The final estimate of caucus dissent was calculated as the median of the low and high range estimates of dissent in each case.

The coherence percentages were transformed into set membership scores using the direct method of calibration, and the fuzzy set was calibrated so that a coherence score of 0% represented full non-membership in the set, a score of 105% represented full membership in the set, and a score of 90% represented the point of maximum ambiguity. Full membership was set at 105% because parties with the bare minimum support necessary to form a legislative majority—that is, parties with 100% coherence—can be precarious as the absence of even one caucus member can undo the majority and its veto. Having more than the minimum necessary legislative support provides a more stable majority and a more dependable veto. The point of maximum ambiguity was set at 90% because, at this level of support a status quo coalition is getting close to being able to exercise a veto, but it is uncertain whether it will get to the minimum 100% coherence it needs. The standard formula was used to calculate the membership scores, shown in the third column of Table 2 (Ragin, 2008, pp. 89–94).

Membership in the set required both high congruence and high coherence, so these variables were joined by the logical AND in determining set membership. This is so because a status quo coalition's influence over a veto player is only as strong as the weakest aspect of that influence, whether congruence or coherence. The standard way to determine set

membership in sets defined by multiple necessary conditions is to use each case’s lowest necessary score as its set membership score (Ragin, 2008, p. 37). Another way is to (evenly) weight the variable membership scores and sum them (Goertz & Mahoney, 2005, p. 525). Both approaches were used, as shown in the fourth and fifth columns of Table 2, providing two assessments of each case’s set membership.

It is also worth re-emphasizing that cases outside the set support H2, while cases inside the set do not. H2 predicts that none of the cases should fall in the set, because none of them should have status quo coalitions with enough influence to wield a vicarious veto when major policy change occurred. Therefore, non-membership in the set indicates support for H2.

Like all analytical tools, QCA has limitations and measures were taken to avoid or address them in this study. A common criticism is QCA’s proneness to measurement errors that can produce misleading results (Hug, 2013). To avoid this, the set membership scores in this study were corroborated with qualitative case evidence, used as an external validity check (Thomann & Maggetti, 2017). QCA has also been criticized as an inappropriate tool for inductive analysis (Hug, 2013), but, given the largely deductive approach taken here, these concerns were moot. Arguably, QCA is more effective as a tool of deductive analysis, though Fischer and Maggetti (2017, pp. 349–350) note several challenges in using it for deductive analyses of policy processes. Following their advice, QCA is used here to investigate “...simple hypotheses based on existing theory,” rather than attempting to investigate the entirety of ACF PCT, in all its complexity (Fischer & Maggetti, 2017, p. 351).

FINDINGS

As shown in Table 2, regardless of how set membership is calculated (shown in the fourth and fifth columns), the results are similar: one case (the Alberta *Water Act*) is almost entirely in the set; four cases are almost entirely out of the set (Ontario’s “Brian’s Law,” the Ontario *Greenbelt Act*, the Canadian *Ending the Long-gun Registry Act*, and the Canadian *Cannabis Act*), and one case is substantially out of the set, but less so than the other outside cases (the Canadian *Firearms Act*). This amounts to five cases supporting H2 to various degrees, and one case not supporting H2.

The five supporting cases have set membership scores at or near zero, so they have no to little membership in the set, a fairly definitive result that may be explained by the nature of policy-making in Canadian majority

governments. If a status quo coalition has little congruence or coherence with a majority governing party, it has little recourse to block policy change because there are no other veritable veto players in Canadian legislative processes. Status quo coalitions may try to have a policy struck down by the courts, but this strategy is only available if a policy impinges on the federal-provincial division of powers in the *Constitution Act, 1867* or the entrenched rights and freedoms in the *Constitution Act, 1982*. So, a status quo coalition with little influence over a majority government is associated with major policy change in Canada, as H2 predicts. In fact, for Canadian advocacy coalitions, this finding underscores the strategic importance of their relationships with mainstream political parties as they try to protect or advance their policy core beliefs. In many instances, the mainstream parties effectively serve as gatekeepers for advocacy coalitions aspiring to major policy change.

The most ambiguously supportive case is the Canadian *Firearms Act*, and this accords with qualitative accounts of the case. The coalitions contesting this major policy change were a gun rights coalition and a gun control coalition, with the gun rights coalition defending the policy status quo. A Liberal majority government, led by Prime Minister Jean Chrétien, took up the gun control cause and pursued legislation to institute universal firearms licensing and registration. Nevertheless, the Liberal party shared some policy core beliefs with the status quo (gun rights) coalition, such as the need to increase punishments for firearms offenders, so they had a small degree of congruence. The Liberals also experienced a minor caucus rebellion among rural and western MPs opposed to universal registration, giving the party some coherence with the status quo (gun rights) coalition. The caucus rebellion was eventually quelled through the enforcement of party discipline, and the *Firearms Act* was passed (Heinmiller & Hennigar, 2022). Given the caucus rebellion in this case, and the absence of caucus rebellion evidence in the other cases, it makes sense that the *Firearms Act* case would be more ambiguously supportive than the other supporting cases.

The single unsupportive case is the Alberta *Water Act* which has a set membership score of 0.94 or 0.95, depending on the mode of calculation; either score indicates that this case is strongly inside the set. Assuming the congruence and coherence measures in this case are valid, set membership indicates that the status quo coalition had substantial influence with a veto player—and was ‘in power’—yet major policy change still occurred. This

is contrary to H2 and raises questions about how this can be squared with ACF PCT.

The fuzzy set scores for the Alberta *Water Act* are corroborated by qualitative evidence, so they are likely valid. Water policy reform in Alberta was contested by an agriculture-irrigation coalition and an environmental coalition. The agriculture-irrigation coalition first took shape in the early 1900s and, for several decades, dominated a unitary water policy subsystem that pursued a massive, state-sponsored expansion of irrigation in southern Alberta. The environmental coalition did not emerge until the 1980s and was greatly concerned about the mounting environmental damage wrought by dam construction, irrigation expansion, and water over-appropriation. Its emergence created a competitive policy subsystem with the agriculture-irrigation coalition working to preserve the policy status quo against an environmental coalition pushing for reform (Heinmiller, 2016).

During its decades as the lone advocacy coalition, the irrigators had formed close ties with officials in the Alberta government who helped construct, expand, and administer the irrigation projects. More importantly it formed a symbiotic alliance with the Alberta Progressive Conservative (PC) party, which governed the province consecutively from 1971 to 2015. The PCs regularly swept the ridings of the southern irrigation belt during provincial elections, they had an irrigation caucus dedicated to the agriculture-irrigation coalition's concerns, and they presided over the largest irrigation expansion in the province's history (Heinmiller, 2016). This helps explain the high congruence and coherence scores between the status quo (agriculture-irrigation) coalition and the lone veto player (the governing PC party). Given their close relationship, there is not much doubt that the status quo coalition had substantial influence over the veto player in this case, yet major policy change occurred, contrary to H2. How can this result be explained?

A good place to start is by considering H1. While H2 is not supported in the Alberta *Water Act* case, H1 is supported. In the years leading up to this policy change, there is evidence of all four policy change pathways in the Alberta water policy subsystem: an internal shock, an external shock, policy-oriented learning, and a negotiated agreement process that served as a platform for policy change (Heinmiller, 2016).

The internal shock was conflict over the construction of the Oldman Dam in the late 1980s and early 1990s. The government's decision to construct the dam, which had long been on irrigators' wish list,

sparked fierce opposition from environmentalists and local indigenous peoples, leading to armed stand-offs between protesters and police at the dam site and an (unsuccessful) legal challenge by environmentalists that was ultimately resolved in the Canadian Supreme Court (Glenn, 1999). The Oldman Dam controversy transformed the policy subsystem from unitary (dominated by the agriculture-irrigation coalition) to competitive (contested by the agriculture-irrigation and environmental coalitions), drastically changing water politics in southern Alberta over the long term.

The external shock was the 1993 provincial election in which the PCs won a majority government. Given that the PCs had been governing consecutively since 1971, the election of the PCs was not shocking; but their hard ideological turn toward neoliberalism under leader Ralph Klein was a shock for most Albertan policy subsystems (Barrie, 2004, p. 265). The turn to neoliberalism increased skepticism about further government funding of irrigation development, and opened the door to new, market-oriented policies such as the buying and selling of water licenses, which had been long-discussed but not adopted. There is also evidence of policy-oriented learning with respect to water license trading as many irrigators, and eventually some environmentalists, came to accept this policy concept after initially opposing it (Heinmiller, 2016, pp. 181–3).

After Klein became PC leader in 1992, the PC government began to take a brokerage role in the water policy subsystem, but without abandoning their agriculture-irrigation policy core beliefs. The PCs, and some irrigators, judged that fierce and sustained resistance from environmentalists would bring further irrigation expansion to a halt and could even threaten current irrigation levels. Finding détente between the advocacy coalitions became a priority because protracted conflict was bad for business (Heinmiller, 2016, p. 157). The Alberta government's solution was to undertake a comprehensive water policy review and to form stakeholder advisory committees—with both irrigator and environmentalist representatives—to recommend water policy reforms. The committee hearings and negotiations produced hard-won compromises, many of which made it into the eventual *Water Act*, including the introduction of regulated water license trading; discretionary water holdbacks from traded licenses to return some water to the environment; the establishment of water conservation objectives to guide holdback and licensing decisions; and, moratoria on new water licenses in three heavily developed sub-basins and a future cap on licenses in the single less developed sub-basin

(Percy, 1996). Collectively, these new policy core attributes constituted a major reform that was implemented over the next decade.

It is worth recounting this process because it illustrates how major policy change could have occurred despite the status quo (agriculture-irrigation) coalition maintaining influence with the policy process's only veto player (the PC government). The PCs did not defect from the agriculture-irrigation coalition. They maintained their agriculture-irrigation core policy preferences and remained congruent and coherent with the status quo advocacy coalition, as the fuzzy set data show. But, *détente* between the adversarial coalitions—after almost a decade of intense conflict—also became a core policy preference as the conflict itself had become damaging. This prompted the PCs to take on a policy brokerage role and made possible the adoption of new policy core attributes, which were accepted as the price of peace.

As the PCs took on a policy brokerage role, the status quo coalition's ability—and perhaps even its willingness—to veto policy water policy change in Alberta began to wane. For a time, the PC government was the only veto player, a member of the status quo coalition, and a policy broker simultaneously, and they reconciled these roles as necessary to quell the political conflict hurting them and their irrigator allies. In so doing, the PC government could defend some status quo policy core attributes as a member of the status quo coalition, facilitate inter-coalition policy compromises as a policy broker, and ensure their passage in the Alberta legislature as the only veto player in the jurisdiction's policy process. This could be considered a tactical retreat by the status quo coalition, striking an armistice with a determined minority coalition as the ongoing battle threatened to overwhelm them. It also suggests that, in the right circumstances, the negotiated agreement pathway can—alone—create conditions for major policy change as a hurting stalemate can diminish the status quo coalition's ability and/or willingness to veto changes to the policy status quo and force it into a negotiated compromise with a minority coalition. This is a policy change scenario not currently contemplated in H2.

CONCLUSION

This chapter has investigated one of the two causal variables in the second ACF policy change hypothesis (H2): that major policy change will not occur as long as a status quo advocacy coalition remains 'in power in a jurisdiction.' Building on recent work, it operationalizes whether a

status quo coalition is ‘in power’ by determining whether it has sufficient influence over a veto player in a jurisdiction’s policy process to wield a vicarious veto. A fuzzy set operationalization is proposed to provide more nuance in measuring the variable than a categorical (present/absent) operationalization can provide.

The proposed fuzzy set is measured according to the extent of congruence between a status quo coalition and veto player policy core beliefs, and the extent of coherence among veto player members with status quo coalition policy core beliefs. Cases with both congruence and coherence are inside the set, and cases lacking congruence and/or coherence are outside the set. Cases of major policy change outside the set support H2, while cases inside the set do not.

This approach was applied to six cases of major policy change in Canada, drawn from diverse policy sectors and including federal and provincial examples. The results showed five cases supporting H2 and one case, the adoption of the Alberta *Water Act* in 1996, not supporting. Further analysis of this deviant case suggested that, in some circumstances, neither of the H2 variables are necessary for major policy change. This challenges H2 and underlines the importance of further work investigating this hypothesis.

Based on a closer analysis of the deviant case, some of the circumstances making major policy change possible—absent either of the H2 causal variables—include the onset of a hurting stalemate, veto player(s) shifting into a policy brokerage role, and the introduction of a negotiated agreement process between contending coalitions. In such circumstances, finding inter-coalition détente and ending the hurting stalemate may become a core policy preference, undermining the ability or willingness of an ‘in power’ status quo coalition to wield a vicarious veto power, making major policy change possible.

The study has some limitations and should not be taken as a determinative falsification of H2. Most obviously, the cases are limited to one country and three jurisdictions, so this limits the findings’ generalizability. The analysis is also restricted to six cases, with larger numbers of cases providing more robust findings when undertaking fuzzy set QCA. The study relies on data collected in previous studies, so any undetected errors in these earlier datasets are likely carried over here. There may also be better ways of measuring congruence, coherence, and coalition influence over veto players, and further work in this area is warranted.

For instance, by operationalizing status quo coalitions as 'in power' according to their influence over veto players, this study focuses exclusively on the first face of power: decision-making power. This neglects the second and third faces of power, agenda-setting power, and ideological power, respectively (Bachrach & Baratz, 1962; Lukes, 2005). In the Alberta *Water Act* case, the status quo agriculture-irrigation coalition retained decision-making power, by maintaining substantial influence with a veto player, but seems to have lost at least some agenda-setting and ideological power in the hurting stalemate with the environmental coalition. Thus, the power condition facilitating major policy change may have been more subtle and latent than in the other five cases and was not captured in the fuzzy set analysis. Whether this is a measurement issue, requiring an operationalization of advocacy coalitions 'in power' that somehow incorporates all three faces of power, or a theoretical issue, requiring some revision or clarification of the ACF policy change hypotheses, is up for debate and is a potentially important frontier in ACF policy change research.

NOTES

1. As much as possible, the reliability of positions was verified through multiple statements and/or documents. If a veto player was consistently in favor of a policy concept, this was coded as support; if a veto player was consistently opposed to a policy concept, this was coded as opposition; if a veto player was consistently ambivalent about a policy concept, this was coded as neutral. If a veto player took inconsistent or vague positions on a policy concept, this was coded as unclear. If a veto player did not mention a policy concept, this was coded as unknown.
2. The standard formula for determining set membership using the direct method of calibration is as follows:

$$\text{degree of membership} = \exp(\log \text{ odds}) / [1 + \exp(\log \text{ odds})].$$

The formula's logic is, essentially, to measure the extent of each case's deviation from the crossover point (i.e., the point of maximum ambiguity) and to scale these results into scores between 0 and 1 (through the exponentiation of log odds to simple odds). See Ragin (2008) for further explanation.

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Antecedents of Policy Change: Advancing the Advocacy Coalition Framework's Theory and Methods

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Studies using the Advocacy Coalition Framework (ACF) repeatedly confirm the ACF's hypothesized argument that policy change is driven by one or more of four proposed pathways: external events, internal events, policy learning, and negotiated agreements. Yet, most traditional textbook applications of the ACF fail to adequately develop theory on policy change beyond identifying these pathways. This, in turn, limits our understanding of the specific motivators for and relative impacts of different changes (or stasis) in a subsystem. As a result, the ACF's theory of policy

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change has progressed, but plateaued, for several reasons. We highlight four of them here in order to catalyze new and sustained theory building around policy change.

First, ACF scholarship on policy change suffers from a “shiny object syndrome”—most studies selectively and purposively pick instances of policy change that are prominent to the researcher. This selection likely favors the analysis of change through some, more visible decision-making venues (e.g., legislatures) over others (e.g., agency regulatory rule-making). It also likely highlights more instances of “major” change, which are *prima facie* recognized by the researcher, over instances of “minor” or less salient change that may not be as immediately obvious. Some less formalized policy changes may be overlooked by researchers altogether, especially in the absence of a shared operational definition of what constitutes change. As a result, ACF studies are often unable to assess the relative meaning of a policy change amidst a broader population of policy changes, whether in the same policy subsystem or beyond.

Second, ACF scholarship lacks agreed-upon methods for studying policy change. While we do not want to impose orthodoxy in methods and methodology, the lack of commonality means our case studies speak past rather than to each other despite sharing a common broader framework. For instance, Heikkilä et al. (2014) illustrate a common ACF approach by selecting a policy change and then studying the explanations for policy change expressed by policy actors, as gathered by interviews or in the public discourse. In contrast, Nohrstedt et al. (2021) first identify events and then model their impacts on potential policy changes. Such methodological differences raise deeper questions about what constitutes an event or who decides (e.g., researchers or policy actors) what an event

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is that might drive policy change. These differences further raise questions about our starting point for studying policy change, such as whether we start with the ACF's pathways (e.g., external events) and observe their potential impacts on policy change, or whether we start with policy changes and observe the possible explanations to derive the pathways.

Third, the ACF's theory of policy change is often misunderstood, in part because it remains relatively vague. For example, while the ACF specifies four pathways for policy change, it does not suggest that these pathways work independently. The ACF also has not exhaustively described the range of possible pathways to policy change or their subcategories. Additionally, it does not argue that the pathways are sufficient conditions for policy change (e.g., a significant external event like a disaster may lead to change or not for a variety of social, political, and institutional reasons). The second, and even more underexplored ACF hypothesis about change, suggests that coalitional power also matters for whether a pathway can lead to change, but that concept also remains under-specified (Heinmiller, 2023). For these reasons, it can be difficult to interpret what constitutes a pathway and what impact it may have on change. Moreover, the ACF's theory of policy change can limit researchers from seeing other explanatory factors that lie outside of the articulated pathways to policy change. That is, the ACF's "pathways lens" can create theoretical blinders that lead to misinterpretation of the true drivers of change.

Fourth, the ACF lacks conceptual clarity in the meaning of the words in two of its pathways: external events and internal events. If we unpack these four words, the ACF does a reasonably good job of defining and describing "external" and "internal," which we elaborate on in the next section below (Nohrstedt & Weible, 2010). However, "events" is not well defined. Instead of definitions, ACF applications define events through examples, such as "policy fiascos" or "policy failures" (Sabatier & Jenkins-Smith, 1999; Jenkins-Smith et al., 2014, 2018), which may potentially lead researchers to select certain types of events to study while ignoring others that may be important.

This chapter builds on the successes and frustrations of policy change scholarship described above to advance theory and methods within the ACF research program. Rather than deeply examining one instance of policy change and attributing it to a specific pathway, we focus on understanding policy change as it relates to 77 new or modified policies across three major formal decision-making venues between 2007 and 2021.

Additionally, we seek to identify the potential influences, motivators, or drivers of each instance of policy change—which we call “antecedents”—based on what policy actors reference as causing policy change within the public discourse. This approach, similar to Heikkila et al. (2014), allows us to avoid defining “events” a priori and instead identifies them inductively by examining policy actors’ explanations of what contributed to policy change.

Following the approach outlined above, this chapter asks the following research question: *What are the antecedents of policy changes over more than a decade of policymaking in a policy subsystem?* The setting of our research is the oil and gas policy subsystem in Colorado, USA—a case that represents active policy change across a range of issues in multiple venues. We identify antecedents of policy change in this subsystem by coding and analyzing policy actors’ references of what contributed to a policy change as expressed in public and government documents, public testimony, as well as news media. We do this for 77 new or modified policies, constituting the entirety of policy changes in three major state-level decision-making venues during the period of study.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

The ACF organizes its theorized drivers of policy change into four broad pathways. Below, we describe the four pathways, provide a brief critical commentary for each, and then summarize our approach to studying policy change.

External and Internal Events

The first pathway is external events. External events happen *outside* a policy subsystem’s territorial or substantive boundary (Nohrstedt & Weible, 2010). As a result, they are often described as occurring outside the control of policy actors in a subsystem (Jenkins-Smith et al., 2018). The ACF lists several subcategories for external events, as found on its flow diagram. These include changes in socioeconomic conditions, changes in public opinion, changes in the systemic governing coalition, and changes in other policy subsystems (Jenkins-Smith et al., 2018). However, the list of external events is not meant to be exhaustive and, among their purposes, serves as a basis for comparisons, lesson drawings, and examples.

The second pathway is internal events. Introduced to the ACF by Sabatier and Weible (2007), internal events occur *within* policy subsystems' territorial and substantive boundaries. Furthermore, these events can emerge from, or be affected by, policies or behaviors of a dominant coalition or other subsystem actors. Examples of internal events include "crises, policy fiascos, scandals, and policy failures" (Nohrstedt et al., 2023, p. 142). Like the list of external events, the list of internal events is not meant to be exhaustive. Furthermore, an internal event might signal a failure of a previous public policy adopted by one coalition, thereby giving an advantage to the opposing coalition to promote change. That said, an external event might be framed and capitalized on by multiple coalitions in different ways to support their own goals.

Across these pathway descriptions, the conceptual definition of an "event" remains unclear, as aforementioned, potentially biasing how researchers conceptualize these pathways. An external event is often assumed to be something big, like a hurricane, and usually something objectively occurring outside of the control of policy actors, while an internal event occurs within subsystem boundaries. However, because the failures or negligence of policy actors may affect how an external event impacts the internal boundaries of a subsystem, the line between external and internal events may be blurred in practice and by researchers.

To complicate matters further, the ACF and much of the policy process literature use "shocks" and "events" interchangeably. As a term, shocks (also called "perturbations") refer to the necessary force to disrupt the equilibrium in many policy subsystems or political systems. "Events" connote a slightly different meaning without the implied suggestion that the occurrence is "shocking" to the subsystem. We define an "event" as "a thing that happens of importance."¹ We use the term "events" to avoid connotations of an actual big impact and to open the possibility that an event itself could be conceptualized as big or small in its effects (Jenkins-Smith et al., 2014; 2018).

Based on the above descriptions, it is also clear that neither internal nor external events guarantee policy change; instead, they provide opportunities for policy change. For instance, policy actors often respond to events by mobilizing political resources and crafting narratives to drive change in their favor. Conversely, actors favoring the status quo can be expected to mobilize counter-narratives in support of existing policy, resulting in framing contests among subsystem actors with divergent beliefs regarding the need for policy change. While events might exist or occur within or

outside a policy subsystem, policy actors will exploit their scope through framing contests and competing constructions (Boin et al., 2009). In this regard, policy actors could frame or construct a relatively “small” event into something big (making a mountain out of a molehill) when attempting to expand the scope of the conflict, or a relatively “big” event into something small (making light of something) when seeking to dampen the potential for conflict.

Similarly, how an event links to pre-existing policy programs is often subject to debate between advocacy coalitions. Such debates focus, for example, on the (in)ability of existing policy—and potentially the dominant coalition that created or maintained it—to effectively prevent the occurrence of harmful events or mitigate its consequences. The ACF expresses the contingency of these internal and external events in relation to the exploitive potential of a coalition and the institutional structures of the policy subsystem through other framework components, such as the “degree of consensus needed for policy change” aspect of Coalition Opportunity Structures.

Policy-Oriented Learning

The ACF’s third pathway to policy change is policy-oriented learning. Policy-oriented learning refers to enduring changes to policy actor belief systems. Policy-oriented learning might involve changes across the belief system, including knowledge, understandings, confidence, beliefs, values, and so on. The idea is that updates to policy actor belief systems will lead them to learn (about the problem, about new solutions, etc.) and thereby change policy. To date, most examinations of learning suggest that new information tends to reinforce the existing beliefs of policy actors within a coalition, while changes (e.g., agreement to disagreement) in policy core and secondary beliefs are rare (Weible et al., 2022). The implication is that policy change through learning is usually incremental or minor, as belief systems slowly change, or that learning may further empower a dominant coalition to strengthen policies to align with their reinforced beliefs.

The foremost challenge in studying the effect of learning on policy change is in measurement. Without measuring actual brain activity, all ACF research (and all research in policy studies) involves self-reported or observed measurements and indicators of learning that are imperfect and subject to criticisms of concept-measure validity. The question is how far we want to stretch the measurement of learning and its impacts. For

example, possible ACF indicators of learning might include change or reinforcement of beliefs found in solicited (e.g., via interviews) or unsolicited (e.g., via public discourse) policy actor responses, observed changes in behaviors (e.g., changes in political strategies), references to new information such as reports or studies, and more (Weible & Workman, 2022).

For instance, regarding learning as an antecedent to policy change, policy actors might mention a scientific report about the health risks of oil and gas development, which could be classified as “learning” because it suggests that an actor gained new information about oil and gas development risks. However, without follow-up interviews, which are still subject to threats to concept-measure validity, we do not know if such a mention indicates some degree of “learning” or simply serves to legitimize pre-existing beliefs. In this chapter and as explained in our methods section, we take a cautious approach and classify the mentioning of a report as a “technical report” internal antecedent if it is generated within the policy subsystem. We did not identify an external antecedent as there were no references to technical reports generated outside the policy subsystem. In the conclusion, we return to the implications of this research on understanding policy learning.

Negotiated Agreements

The ACF’s fourth pathway to policy change is negotiated agreements. These occur when conflicting coalitions experience a “hurting stalemate,” meaning they have each exhausted all political venues for achieving their desired policy changes unilaterally and still view the status quo as unacceptable. One of the challenges with the negotiated agreement pathway is that “negotiations” happen in any decision-making venue with coalition competition. Thus, “negotiation” alone is not an explanatory factor for policy change. Instead, within the ACF the main explanatory factor is “hurting stalemate”—and the changes it may provoke in actors’ willingness to negotiate.

A hurting stalemate specifically addresses negotiation within contexts where all other policy options have been exhausted, thus, any instance of negotiation is not equated with the pathway of negotiated agreements. Hurting stalemates originally developed as one explanation (among many) for why coalitions would choose consensus-based or win-win processes over adversarial or win-lose processes. Of course, coalitions

might negotiate for other reasons (Koebele & Crow, 2023), but the question is what led them to negotiate, which is inevitable outside of a dominant coalition without any opposition.

The archetypal example of a negotiated agreement and a hurting stalemate occurred in the Lake Tahoe Basin when both coalitions viewed the current governing approach as unacceptable, with environmentalists concerned about the continued degradation of water quality and developers unable to build. Thus, after almost two decades of debates and conflicts, these coalitions decided to negotiate an agreement (Weible & Sabatier, 2009). In this chapter, if a policy actor gives a reference that matches a “hurting stalemate” we code it as such.

Other Drivers of Change

The four pathways above are captured in the ACF’s first hypothesis of policy change: that at least one pathway will be present alongside an instance of policy change. As alluded to above, the ACF has a second hypothesis that major policy change will more likely occur under two conditions. The first is that policy change is more likely to occur after the coalition that instated the policies loses power (Heinmiller, 2023). The second is that policy change is more likely to occur when imposed by a hierarchical jurisdiction, such as a national-level agency creating new policies that a sub-national agency must implement or similar changes imposed following shifts in national-level political party control. The mechanism for this hypothesis is shifting coalition power or imposed change from outside the subsystem. This chapter folds the hierarchical jurisdiction component of the hypothesis under external events rather than coding it separately. We found instances when the US Environmental Protection Agency passes requirements that must be met by a state government or agency, policy change is likely to occur at the state level.²

STUDY CONTEXT

This research seeks to expand theory around policy change in the ACF by inductively exploring what policy actors cite as “antecedents”—or potential influencing, motivating, or driving factors—for multiple policy changes in a common subsystem. We focus on the state of Colorado and its oil and gas subsystem at the state level. This subsystem aligns with

many traditional textbook ACF studies because it has two competing coalitions in high conflict over policy-core beliefs. Additionally, several actors are engaged in this subsystem. Along with the governor and state legislature, two regulatory bodies contribute to policymaking in this subsystem. First, the Oil and Gas Conservation Act (CRS §§ 34–60–101 et seq.) established the Colorado Oil and Gas Conservation Commission (COGCC)³ to serve as the primary regulator of oil and gas and to protect public health, safety, and the environment (§ 34–60–106(2)(d)). Second, the Colorado Department of Public Health and Environment (CDPHE) plays a role in regulating oil and gas through its Air and Water Quality Control Commissions, established under the Air Pollution and Prevention Control Act (CRS §§ 25–7–100 et seq.) and Water Quality Control Act (CRS §§ 25–8–100 et seq.). For this study, we combine both the COGCC and CDPHE into one regulatory category.

Furthermore, we focus specifically on public policies related to unconventional oil and gas development (hydraulic fracturing or fracking) in this subsystem. Hydraulic fracturing is a technology that revolutionized oil and gas development in the early 2000s by fracturing underground rock using water, sand, and chemicals to extract oil and gas from small, isolated pockets. The introduction of horizontal drilling further allowed oil and gas development to become profitable in Colorado and expand to previously unfeasible areas. These new technologies exacerbated conflicts, embroiling state and local governments, citizen groups, environmental groups, industry, and scientists (Weible et al., 2016). During this time, the state of Colorado responded with a flurry of policy changes to regulate fracking. This study examines the entire population of 77 new or modified policies from the three key state-level venues introduced above—the Governor (executive), the State Legislature, and the regulatory bodies (COGCC and CDPHE)—between 2007 and 2021.⁴

METHODS

We define *policy change* as any decision that passes through a venue that introduces new rules or modifies existing rules in the subsystem (Fullerton & Weible, 2023). Policy changes in this subsystem were identified in each of the state-level venues starting when shale oil and gas development expanded rapidly in Colorado (2008). Any new or modified policy passed in these venues, as identified through public records, was deemed a policy change. A total of 77 policy changes were identified in the subsystem

between 2007 and 2021, including 42 regulations from state agencies, 31 pieces of state legislation, and four executive orders from the governor.

We define *antecedents* as an expression by a policy actor in the public discourse of anything that happens before the policy change and is linked to policy change through their language. Some of these examples include explicit language (e.g., using phrases such as “because of,” “as a result of,” and “led to,”), while other examples include inferences of how people expressed understanding the reasoning for policy change. Examples of antecedents can include (but are not limited to) references to events, responses from other governments, citing new information, citing prior policy decisions, and more.

The data sources for identifying references to antecedents include government documents from the policy venues, public comments on policies, newspaper articles with direct quotes from policy actors, and audio testimony from the state legislature. Primary sources were identified by searching legislative and regulatory records associated with each policy and news media coverage of oil and gas development in two major Colorado newspapers for keywords related to each of the 77 policies. The unit of observation in this study is *the antecedent of policy change*, not the individual document. Information on each policy change and its antecedents was gleaned from multiple documents, when available, to characterize how people involved in the subsystem interpret and make sense of these policy changes.⁵

To understand policy actors’ expressions of antecedents in the public discourse, we code how they describe their understanding of why a policy change or new policy is enacted during any part of the policy process. This approach does not allow us to identify “objective” data or independent variables that can be modeled causally in explaining policy change. However, we observe antecedents that people specify themselves in public discourse. Thus, data may reflect their strategies and objectives in framing the rationale for the policy change, their efforts to make sense of the policy change, the focus of their attention, and more. This approach gives insights into how policy actors construct their view of policy change and what they see as important, rather than what we as researchers deem important.

Our identification and coding of antecedents uses an *inductive subjective-antecedent analysis* which leverages both an inductive and deductive approach. We intentionally began with a wide net in which we inductively identify and code antecedents. We later further categorize

the codes deductively according to common categories in the literature on policy change, including the ACF and beyond. We engaged in three rounds of coding with several intercoder reliability tests throughout to develop more refined theoretical categories⁶:

Round 1. We coded each policy for basic characteristics, including purpose, venue, and date of proposal and passage.

Round 2. We identified an antecedent when we read or heard evidence of an actor saying or inferring why or what led to a policy change or when we read about antecedents in the scope or motivation of policy documents. We inductively coded statements containing antecedents using qualitative software (Atlas.ti), as well as descriptively in Excel, and later identified themes separate from the ACF pathways.

Round 3. We categorized the coded antecedents into two broad categories (external or internal reference) and several subcategories. External antecedents refer to something outside the subsystem's scope either substantively or geographically, while internal antecedents refer to something inside the policy subsystem's scope either substantively or geographically. For the subcategories, we relied partly on the existing subcategories of internal and external events in the ACF and partly on our interpretation of common categories of coded themes. These subcategories were categorized inductively through coding the antecedents and by teams of researchers for intercoder reliability. They can be found in the results (Table 1), with additional explanations in the Findings section.

As we coded, we paid particular attention to subsystem context. For instance, Colorado's Governor Hickenlooper, who was in office between 2011 and 2019, crafted several executive orders and spearheaded many policy changes, often acting as a policy broker with advocacy groups on various sides of the issue and with regulatory agencies (Heikkila et al., 2014). Due to his close relationship with actors in the oil and gas subsystem, we coded his involvement as internal to the subsystem despite his broader position in the state government.

We also paid attention to common explanatory arguments of policy change found across the policy process literature when coding antecedents. These include path dependency, policy feedback, policy

diffusion, conflict, policy entrepreneurs, and more (Fullerton & Weible, 2023). Throughout our rounds of coding, we used these theoretical concepts to help classify the antecedents identified by policy actors into subcategories. Our goal was to ensure a complete collection of antecedents as possible and not exclude something just because the ACF has not yet identified it.⁷

FINDINGS

We begin the presentation of our findings by charting the frequencies of enacted policies per venue over time, as shown in Fig. 1. The vertical axis on the left refers to the number of policies enacted each year (shown by the bars), while the axis on the right refers to the cumulative total number of policies (shown by the line).

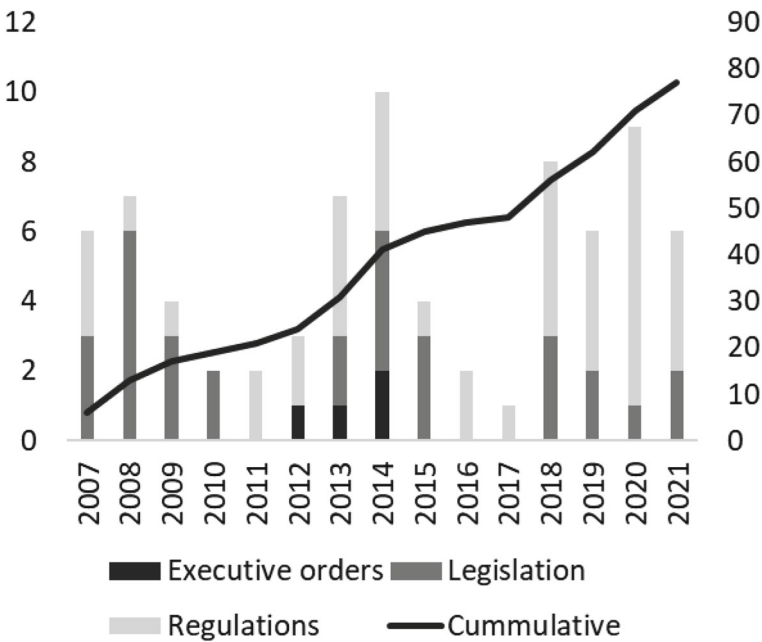


Fig. 1 Policy change frequencies and totals over time

The number of policy changes in each venue fluctuated per year, but in total, we identified 42 regulations total from the two regulatory agencies, 31 laws made by the Colorado Legislature over the full time period, and four executive orders between 2012 and 2014, during Governor Hickenlooper's tenure. These 77 policies are all separate policy decisions, whether they created entirely new policies or amended previous policies. The executive orders preceded a spike in legislation in 2014–2015, while the regulations between 2019 and 2021 primarily implemented legislation—particularly including SB19–181, a 2019 law that overhauled how the oil and gas subsystem was regulated.

Table 1 summarizes the percentage of the antecedents for the three policymaking venues. For example, there were 42 policies and 117 identified antecedents for the regulatory venues. Of those antecedents, 87% (or 102 of the 117) were coded as internal. This table also displays the subcategories for the internal and external antecedents by venue. For example, of the 102 antecedents associated with internal factors, 36% (or 42 out of the 102) were coded as “reference to previous policy,” a subcategory that captured antecedents when actors cited a past policy as a reason why we have policy change, which was present in all three venues. We also identified 31 legislative instances of policy change with 77 antecedent pathways, as well as four executive orders with sixteen antecedent pathways.

Looking across the 77 new or modified policies by venue, most were associated with internal antecedents (87% to 100% per venue), rather than external antecedents. Most of these internal antecedents were references to past policies: every regulation cited a past piece of legislation as an antecedent for the change, and 26 of the 31 pieces of legislation also cite past policies. Additionally, audio testimony frequently included multiple examples of legislators and their constituents citing specific examples of why they are dissatisfied with past policies and how the new policy addresses their concerns. Many times, this dissatisfaction would stem from conflict between stakeholders, local governments wanting to be able to self-regulate, and citizen groups worried about air quality and other pollutants.

Another common internal antecedent pathway subcategory in regulatory and legislative venues are references to socioeconomic factors. Resultant policy changes are therefore likely due in part to the impacts of rapid growth within the subsystem. For example, in 2008 regulatory bodies processed a record of 5904 permits compared to previous years when at most 1000 permits were processed. This alone, created a need

for changes in regulation that later spurred several additional instances of policy change. These changes would often start as legislation that would result in the enactment of multiple legislatively mandated policies by the regulatory agencies.

Regarding external antecedents for the regulatory and legislative venues, we identified subcategories related to the existing literature on ACF's external events pathway, such as changes in socioeconomic conditions, climate change, or crises/disasters. Examples of external disasters include flooding in 2013 and the COVID-19 pandemic in 2019. These two events were cited as antecedents to several policy changes that aimed to improve the safety of oil and gas operations. External socioeconomic changes included the rapid growth of the oil and gas industry in general, as well as broader economic challenges, which were also often linked to the COVID-19 pandemic. Additionally, external antecedents included policy changes in another subsystem, such as when the Colorado state legislature created new laws to comply with federal-level policy changes targeting oil and gas development.

We also observed subcategories for internal and external antecedents within regulatory venues that are not typically mentioned in relation to the ACF's pathways to policy change (see Table 1). These include references to other governments in the same subsystem and references to previous policies. As previously mentioned, the most frequently cited subcategories include references to past policies. The rules issued by the two main regulatory agencies (i.e., COGCC or CDPHE) all explicitly mention requirements to promulgate rules in response to a specific piece of legislation.

While Table 1 separates antecedents into internal and external categories, each with subcategories, it is important to note that many internal and external factors are actually interconnected in the subsystem. For example, the 2018 Colorado State election that gave the Democratic Party control of the executive and legislative branches of government was an external event. That event, in turn, likely gave more power to the "anti-fracking" coalition and minimized the power of the "pro-fracking" coalition that was dominant for more than a decade—an internal event. Both events are related to the policy change in 2019, when the newly elected Governor Jared Polis signed a piece of legislation, SB19–181, into law, strengthening the environmental and public health mission of the COGCC and giving local governments more authority over oil and gas regulation. The creation of this law can also be interpreted as an internal

Table 1 Proportion of antecedents by venue

	<i>Categories</i>	<i>% by Venue</i>	<i>Subcategory</i>	<i>Sub-categories' % by venue</i>
Regulatory venues (policies=42 antecedents=117)	Internal Antecedents	87	Previous Policy	36
			Mobilization	13
			Conflict	8
			Natural	6
			Environment	
			Other	5
			Governments	
			Socioeconomic	5
			Factors	
			Technical Report	4
			Crisis or Disaster	3
			Entrepreneur	3
			Learning	3
	External Antecedents	13	Support	2
			Change in	5
			External Gov	
			Crisis or Disaster	4
			Socioeconomic	2
			Factors	
Legislative venues (policies=31 antecedents=77)	Internal Antecedents	87%	Technology or Science	2
			Previous Policy	34
			Socioeconomic	9
			Factors	
			Learning	9
			Conflict	9
			Technical Report	5
			Mobilization	5
			Other	5
			Governments	
			Support	4
			Crisis or Disaster	3
			Entrepreneur	3
			Natural	1
			Environment	

(continued)

Table 1 (continued)

	<i>Categories</i>	<i>% by Venue</i>	<i>Subcategory</i>	<i>Sub-categories' % by venue</i>
Executive venues (policies=4 antecedents=16)	External Antecedents	13	Change in External Gov	10
			Crisis or Disaster	1
			Socioeconomic Factors	1
			Technology or Science	0
	Internal Antecedents	100	Conflict	31
			Hurting Stalemate	25
			Mobilization	13
			Other Governments	13
			Previous Policy	13
			Socioeconomic Factors	6
			Change in External Gov	0
			Technology or Science	0
			Socioeconomic Factors	0
	External Antecedents	0	Crisis or Disaster	0

event (i.e., “previous policy”) as it required COGCC and CDPHE to pass dozens of new regulations in 2020 and 2021, including giving local governments more political authority in the regulatory process and increasing environmental protection. The distinctions of external and internal antecedents are important from an ACF theoretical perspective to help refine and clarify differences between the pathways, but in practice, these pathways likely intertwine to produce policy change.

For both regulatory and legislative venues, we identified several instances of learning. We classified policy learning into two internal antecedent subcategories, as there were no mentions by policy actors of learning from different subsystems or from sources external to the subsystem. The first internal subcategory is when an actor shares an explicit mention of learning in their testimony, comments, or news media interview. One example is related to a piece of legislation changing spill

monitoring. One policy actor noted, “We are smarter to preemptively find conditions conducive to spills before they occur.” The second internal subcategory includes explicit mentions of technical reports or recommendations from experts. For example, many of the technical reports followed events such as internal spills or external floods. In addition, recommendations from stakeholder collaboration processes were sometimes mentioned by legislatures during testimony or mandated through task forces. It was also common within public comments in rule-making processes for individuals to mention technical reports by consultants, government, or industry as part of the testimony supporting their policy position.

We only find four instances of a hurting stalemate preceding policy change in the executive venue, where it was classified as internal. This venue has sixteen antecedents in total. The hurting stalemates were associated with four executive orders, which all happened during Governor Hickenlooper’s tenure between 2011 and 2019. Coded data indicated that these executive orders were primarily driven by internal conflict and political mobilization.⁸ Additionally, leading up to these executive orders were multiple statewide ballot initiatives that sought to regulate different parts of the oil and gas industry. For the hurting stalemate, Governor Hickenlooper acted as a broker by ending a contentious standoff in the state against those on both sides of the fracking issue. The governor launched a collaborative-based task force with competing interests to find common ground. These competing interests created several recommendations, which later influenced new legislation and regulations.

CONCLUSION

Studying antecedents can advance the study of policy change by including the reasons attributed to policy change by policy actors alongside those attributed by researchers. Here, we summarize our findings and offer several research recommendations for scholars to advance the study of policy change both within and beyond the textbook applications of the ACF.

External and Internal Events

First, this study’s research methods enabled us to expand upon the subcategories of external and internal references and, by extension, instances of

events. In doing so, we developed a list of subcategories under internal events that parallel the list for external events. For example, changes in public opinion (e.g., society-wide) can be an external reference, but there can also be changes in public opinion (e.g., a specific oil and gas community within a subsystem) can be an internal reference.

In a study of 77 new and modified policies across legislative, regulatory, and executive venues in a single policy subsystem, we found that antecedents—as referenced by policy actors—could more frequently be characterized as internal than external. Theoretically, within this case, this pattern makes sense. Policy actors will more likely observe and reference salient events happening in their proximity than those that are distant, though some highly salient distant events may still have an impact. For example, it makes little theoretical sense that policy actors in Colorado’s oil and gas policy subsystem would refer externally to events in Oklahoma’s oil and gas policy subsystem at a higher frequency than events occurring internally in their policy subsystem for a population of policy changes. What patterns of antecedents will emerge within different state subsystems surrounding the same or different policy topics remains uncertain.

The main finding on internal events contrasts with the existing ACF literature that tends to favor external events over internal events as an explanation for policy change (Pierce et al., 2020). This is potentially due to the fact that external events may be more salient to researchers, but it may also be by extension of textbook policy change theory emphasizing the importance of external events. By identifying all events related to any of 77 policy changes through policy actor references in the public discourse and inductively categorizing them, we avoid some of the biases that may be introduced by selecting cases based primarily on the presence of a single, salient, and often external event. Thus, we encourage scholars to use caution when interpreting the low frequency of internal events reported in past ACF scholarship and mentioned by Pierce et al. (2020). Put simply, many existing ACF studies do not look for internal events and, therefore, do not see them, instead focusing on the “shiny object” of a salient external policy change. Hence, even though external events are often mentioned more in the literature, we expect internal events to appear more herein, given the openness of our theoretical lens, the inductive focus on references made by policy actors, and the inclusion of all policy changes in our sample.

Another contribution of this study is our confirmation of some of the existing subcategories of external events in the ACF, such as changes in socioeconomic conditions, public opinion, changes in the systemic governing coalition, and changes in other policy subsystems. We also identified potentially new subcategories for policy change within external events and internal events. Most frequently, these included the importance of past policies, supporting arguments of path dependencies in the ACF and echoing arguments made by Schmid et al. (2020). Additionally, we note that some of the identified antecedent subcategories are typically listed under ACF's relatively stable parameters, but at least in this subsystem, they are likely to change rapidly. For example, environmental changes, especially in the context of oil and gas development, were mentioned as an antecedent to change. Given these findings, we recommend that *studies of external and internal antecedents (or events) should continue to clarify and expand on the broad list of subcategories developed herein and go beyond the textbook.*

Policy Learning and Negotiated Agreement

Second, we identified and categorized antecedents of other pathways to policy change that have been found in the ACF literature—learning and hurting stalemates—as either internal or external. In general, the empirical evidence suggests that these two specific drivers of policy changes are more often discussed in relation to internal aspects rather than external aspects. At the same time, we noted some challenges and ambiguities with coding and interpreting both learning and negotiated agreements.

For learning, one of the challenges we found was that nearly every antecedent could be categorized as learning if the concept indicators were stretched enough. Rather than diminish the importance of learning as a concept by claiming that all expressed antecedents are learning, however, we required policy actors to explicitly reference data or a report for our technical report learning code. Our purpose is not to discount the importance of learning from a wide variety of stimuli. Instead, we note that this research is not a case study of a single instance of policy change that permits interviews or surveys, which allow researchers to make claims about learning with greater confidence. Considering the scale of a population of policy changes (i.e., 77 new or modified policies) and the data source (i.e., policy actor references), our evidence is limited to what was spoken or written, which constrains our confidence about claims of

learning. As such, we offer the following research recommendations: *Do not assume that policy actors are learning from past events or past policies, and research designs for policy learning are best achieved with the inclusion of surveys and interviews.*

Regarding negotiated agreements, this study found that hurting stalemate was rarely referenced. This makes sense given the unlikely situation that coalitions in a single subsystem would repeatedly experience hurting stalemates. However, similar to learning, if we were to stretch the indicator of a hurting stalemate to any measurement of “negotiation,” then we would find evidence for this pathway for nearly all policy changes, given that negotiation will most likely always happen in any subsystem. In contrast, a hurting stalemate is one reason why coalitions negotiate on the most conflictual issues. The infrequent occurrence of a hurting stalemate over a decade of policy changes in the Colorado oil and gas policy subsystem matches observations in other policy subsystems (Weible & Sabatier, 2009). Thus, we argue that while applications of policy change beyond the textbook are necessary, it is important to avoid stretching or muddling pathway indicators too far and creating more noise than signal. As such, we recommend the following: *For the studies of policy change, do not stretch the pathway indicators. For negotiated agreements, do not expand indicators to include any measurable instance of negotiation but instead restrict them to situations with clear evidence of a hurting stalemate as an antecedent.*

Limitations and Pathways Forward

This study partly avoided the shiny object syndrome by studying an entire population of policy changes rather than just the salient ones. However, our study did not altogether remove this bias. For example, if we were to consider a longer timeframe, say 50 years, we would likely notice that the last decade of oil and gas development was a period of radical policy changes. Indeed, taking insight from Punctuated Equilibrium Theory the decade we selected might represent a punctuated time of major policy change precipitated by technological changes (horizontal drilling), increased policy attention from public, and policy actor backlash related to a broader population of policy changes across policy topics. In other words, in Colorado’s oil and gas policy subsystem, the shiny object that drew our attention was the last decade or so of change, where policy actors and state leaders have allocated attention. If we were to

study another policy subsystem that attracted less attention, our findings might be very different. Similarly, we also did not study instances of failed policy changes and their associated antecedents. The research recommendation that follows from this is that *studies of the population of policy changes should seek to avoid shiny object syndrome through thinking comparatively across time, topical areas, and instances of failed and successful policy changes*. In addition to these suggestions, researchers should also consider how their work is situated within or beyond textbook applications of the ACF. We, therefore, also recommend that researchers *intentionally situate themselves within or beyond textbook applications. Studies should consider how they are situated within the ACF scales of different collective action aggregation, democratization, stage of development, conflict intensity, resource distribution, and policy actor aggregation*.

On a more micro-level, we faced variation in our data availability, specifically in that not all bills prior to 2013 had audio testimony available. We also caution that antecedents derived from actor references are inherently subjective and, to some degree, restrict our ability to generalize about the connection between certain antecedents and policy change beyond this specific subsystem.

This chapter highlights what we consider one of two different ways of analyzing policy change in the ACF. The first way is to identify the population of a type of explanatory variables (e.g., disasters) and assess their association with policy change in the appropriate venues. For example, Nohrstedt et al. (2021; 2022) identified a population of disasters and then tried to link them to policy change, without finding an association. The approach championed by Nohrstedt and colleagues can be termed a “*deductive objective-determinant*” analysis. In other words, they identify from theory an explanatory factor and then seek to assess its linkage to policy change from an objective, outsider perspective as researchers. In contrast, we identify a population of policy changes and then glean the expressed antecedents to policy change from policy actor discourse. This approach is an “*inductive subjective-antecedent*” analysis whereby we identify a population of policy changes and then inductively identify all observable expressed antecedents to a policy change mentioned by policy actors. In other words, our analysis is the study of what policy actors perceive as occurring before the policy change. Importantly, we do not claim that one approach is better than another, as they both have advantages and disadvantages. More importantly, these are two viable methods (among possibly many) for advancing the ACF’s theory of policy change.

NOTES

1. We rely on common language and adapted this definition from Merriam-Webster, October 1, 2022 <https://www.merriam-webster.com/dictionary/event>.
2. Another imposed change in the context of the US federal system could be when Colorado local governments pass ordinances that influence state-level policies. Thus, hierarchically imposed pathways to policy change can be both top down and bottom up although we did not find bottom up examples in our data.
3. The COGCC was renamed the Colorado Energy and Carbon Management Commission on July 1, 2023.
4. Obviously, we are not considering some other venues. For example, local governments and courts or collaborative-based informal venues are not included. There were also multiple ballot initiatives surrounding this issue in the subsystem that we do find cited as antecedents, but we did not include them into our sample of policy changes.
5. As certain policies garnered more public attention than others, we did not code every individual instance of an antecedent for each policy, but rather we coded each unique antecedent by the narrator and cited antecedent. In addition, several instances of relatively minor change within our sample were not mentioned or associated with any antecedents by actors or newsmedia.
6. Of course, these three rounds are portrayed as if we had this planned out from the start. Each round actually involved multiple iterations of coding and recoding. However, we think the three rounds capture what we did in a clear way that can guide other scholars.
7. Given the inductive aspect of this coding, the procedure was not conducive to intercoder reliability tests. Two or three members of the research team reviewed the coding at each step and reached consensus in the interpretation of the results. We continue to develop a refined more deductive coding procedure for intercoder reliability tests.
8. We classified Hickenlooper's role in the subsystem as internal due to his prior involvement and knowledge within the oil and gas subsystem before being governor.

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Coalition Opportunity Structures and Policy Change: A Comparative Analysis of Nuclear Facility Siting Efforts in the US

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INTRODUCTION

The Advocacy Coalition Framework (ACF) argues that policymaking occurs within issue-specific subsystems wherein one or more groups of like-minded individuals and organizations (coalitions) work together (coordinate and combine resources) to translate their shared beliefs into public policy outcomes (e.g., Jenkins-Smith et al., 2018; Sabatier & Jenkins-Smith 1993; Weible et al., 2020). One of the primary openings for policy change comes about when a previously dominant coalition loses ground to an opposing coalition. To explain policy change within the ACF, one must identify the reasons why the balance of power shifts between coalitions within the subsystem. According to recent versions of the ACF, this shift in power can arise endogenously or exogenously (Jenkins-Smith et al., 2018). On the exogenous end, there are two sets

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of variables that influence the balance of power within the subsystem—*relatively stable parameters* (such as the basic attributes of the problem, sociocultural values, and constitutional rules) and *external events* (such as changes in socio-economic conditions, public opinion, or changes in government).

External events can sometimes shock the subsystem, altering policy beliefs and strategies of coalitions, as well as their ability to influence policy change (Bandelow et al., 2019; Fenger & Klok, 2001; Olofsson et al., 2018). Relatively stable parameters rarely change, but they are crucial for establishing the distribution of resources and constraints within which subsystem actors operate. Both of these largely exogenous sets of variables shape the dynamics between different coalitions, including the balance of power among them. The relatively stable parameters set the stage for basic institutional rules and regulations that constrain or enable coalitions, and the external events hold the potential to alter the amount of influence (and resources) a coalition has compared to its opponents.

The institutional parameters that influence the policy process have been incorporated into the ACF under the umbrella of “coalition opportunity structures” (COS). COS can help policy scholars better understand the role of institutional factors in the policy process, including coalition formation, behavior, and policy change (or stasis). However, the notion of COS needs theoretical refinement as well as empirical analysis. Common case approaches within the ACF exploring COS may present them as a fixed collection of institutional arrangements (chiefly venues for influencing collective decisions and rules for access and engagement) within which coalitions seek to shape policy; however, these arrangements are subject to change. Coalitions may employ strategies to alter COS to obtain and/or retain advantages. Winning or dominant coalitions may influence the institutional rules of the game to shape COS to maintain the status quo (Olofsson, 2021; Schattschneider, 1975). Therefore, in addition to refining the ACF’s characterization of the COS as “relatively stable,” we need to understand COS as potentially dynamic over time. Changes in COS may be a significant ingredient in the relative influence of coalitions, and therefore of policy change.

This chapter theorizes about COS in federal or delegated authority governing systems, focusing on periods of stability and change that enable or constrict the ability of actors to influence policy by upholding, challenging, and perhaps overturning the policy status quo. We explore the directionality of the effect of COS on policy change, specifically whether

policy change is more or less likely in open systems with multiple venues and strong norms of consensus. One can argue that open systems and strong norms of consensus allow a single actor to induce stalemate and delay or stop policy change from occurring. However, a competing logic suggests that relatively open systems with strong norms of consensus provide incentives for revisionist coalitions to form and pursue policy change, thereby making it more likely that change occurs. We also expand the theoretical scope of the COS concept by supplementing measurement and operationalization of COS at the national level with more dynamic measures at the state and subsystem levels. We argue that in federal political systems such as the US, different state-level institutional features result in different opportunity structures for policy actors to pursue. Subsystem-specific features such as regulatory independence and issue-specific norms and laws provide variation in opportunities to coalitions interested in pursuing policy change. At the same time, broad institutional changes at the federal level that increase the array of decision forums that can shape policy, and that permit new players to engage, can lead to sweeping changes across the subsystem. Using the siting of nuclear facilities as the empirical focus, we pose the following research questions: In what ways do subsystem and state-level COS influence the policy process in a federal governing system? How do larger scale changes at the federal level affect the outcome of coalition battles across states?

We address these questions using an original dataset of planned nuclear facilities in the US. We find that a combination of short-term and long-term COS, which varied at the state and subsystem level at the time of policy outcomes, influenced the likelihood of policy change (facility cancellation). For example, the establishment of the Nuclear Regulatory Commission (NRC), which made the subsystem more open and accessible, significantly increased the likelihood of policy change in the subsystem. Political divisions in state government and state norms of consensus, both of which varied over time and across states to create (and restrict) opportunities for revisionist coalitions, also had a significant influence on the probability of policy change. We conclude by discussing the implications of these findings for the ACF and identifying opportunities for future research.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

A new set of variables—collectively referred to as “long-term coalition opportunity structures” (COS)—that mediate the relationship between relatively stable external parameters like political institutions and the dynamics that occur within policy subsystems were incorporated into the ACF by Weible and Sabatier in 2007. Inspired by research on social mobilization and contentious politics more broadly (i.e., Kitschelt, 1986; Kriesi et al., 1995; Kübler, 2001; Tarrow, 1989), COS remind theorists that people do not form advocacy coalitions, amass resources, make strategic decisions, and affect public policy in vacuity. Rather, the institutional contexts within which people and coalitions exist provide incentives, rules, and norms (i.e., opportunities) that make some decisions more attractive and some actions more effective, than others (Meyer, 2003). Thus, if we want to understand and explain the policy process, we must account for the role of opportunity structures, which vary across institutional contexts.

In current specifications of the ACF, COS are measured along two interrelated dimensions: (1) the *openness* of a political system and (2) the degree of *consensus* required in that political system for major policy change (Nohrstedt & Olofsson, 2016; Weible & Sabatier, 2007). The relative openness of a political system is defined along two sub-dimensions: (a) the number of decision-making *venues* that policy proposals in that system must go through and (b) the *accessibility* of those venues. According to this conceptualization, pluralist countries such as the US are relatively open. Policymaking authority is separated across multiple institutions and different levels of government, all of which are relatively accessible to actors that wish to involve themselves in the policy-making process. Corporatist and neo-corporatist countries (like Norway, Sweden, and Austria), by comparison, are traditionally characterized as less open, because decision-making is more centralized and access to the policymaking arena is relatively difficult to come by (Lulofs & Hoppe, 2010; Nohrstedt & Olofsson, 2016; Sabatier & Weible, 2007).

The degree of consensus needed for policy change captures the number of people, organizations, opinions, and/or votes necessary to alter public policy in different systems (Sabatier & Weible, 2007). At the high end of this dimension, systems like Switzerland are governed by strong norms of consensus, wherein significant policy change requires consent from as many people as possible—including minority groups. Systems like the

US and UK fall in the middle of this dimension; policy change requires consent from majority or relative majority groups, but not minority groups. Authoritarian systems like North Korea are at the low end of this dimension. In these systems, governing minority groups are capable of changing policy without the consent of the others, much less the majority (Lulofs & Hoppe, 2010; Sabatier & Weible, 2007).

Having defined the concept, a small but growing group of researchers have directed their attention toward the development and testing of theories and hypotheses that specify the pathways through which COS affect the policymaking process. Broadly, these theories suggest that COS affect the policymaking process by influencing: (1) the composition of subsystems, (2) the behavior of coalitions within subsystems, and, by extension, (3) the probability of policy change in subsystems.

COS are theorized to influence the *composition of subsystems* by affecting coalition formation and participation. Opportunity structures (in addition to factors like resource availability) create transaction costs and shape benefit perceptions that boundedly rational policy actors weigh when deciding to form or join a revisionist coalition that challenges the status quo in a subsystem. When barriers to entry (transaction costs) are relatively low (venue access is easy) and the benefits of coalition formation are high (many potentially sympathetic venues where compromise and consensus is necessary), actors may be more likely to form or join a revisionist coalition because it is relatively easy and success in overturning the status quo is possible. When barriers to entry are high (venue access is difficult) and the benefits are low (few if any potentially sympathetic venues; consensus is unnecessary), few policy actors will commit the time and resources necessary to form or join a revisionist coalition because it is difficult, costly, and seemingly unproductive. In these situations, actors may decide not to participate in the policy process at all, or pursue mechanisms outside the subsystem, such as social mobilization. This, in turn, serves to reinforce the influence of the currently dominant coalition or fundamentally reshape the policy subsystem by expanding the scope of conflict (Baumgartner et al., 2009).

COS influence the *behavior of coalitions* by affecting the venues available to them, the rules of engagement within those venues, and patterns of coordination within and across coalitions (Kagan & Olofsson, 2023; Olofsson, 2021). Most directly, COS demarcate the venues available to coalitions and thereby influence the strategies (litigation, public protest, etc.) they will adopt in pursuit of policy change. For example,

Gupta (2014) finds that centralized policy subsystems with restricted access to decision-making venues lead coalitions to adopt confrontational strategies designed to disrupt the subsystem status quo, whereas decentralized policy subsystems with increased access to decision-making lead coalitions to adopt assimilative strategies designed to work within the subsystem status quo. Along similar lines, Kagan and Olofsson (2023) finds that COS influence policy actors' perceptions of potential success in different venues, which in turn influence perceptions of effectiveness of different tactics for engaging in the policy process. Less direct, but just as important, COS can institutionalize mechanisms of information exchange that facilitate or inhibit communication and coordination between policy actors or groups who have complementary beliefs and goals, often without knowing it (Leifeld & Schneider, 2012).

Often *because* COS influence the composition of subsystems and the behavior of coalitions within subsystems, COS also influence the *probability of policy change* in subsystems. One logic underlying this conjecture stems from research on veto players, which are actors or institutions who can stop a change in policy from the status quo (Tsebelis, 1995; 2002). Policy change can be slow and difficult in relatively open systems with many decision-making venues that require consensus from multiple veto players, especially if the veto players have different incentives and policy beliefs (Ingold & Varone, 2012; Sotirov & Memmler 2012). In these settings, a single person/group (even if they are in the minority) has the capacity to induce stalemate by rejecting the ideas of others. The veto players logic rings true in many situations and past studies, but an opposing logic is also possible. As we explain above, COS affect the decisions and strategies that revisionist coalitions make about when to form and how to challenge the status quo. Relatively open systems with strong norms of consensus encourage revisionist coalitions to form and fight for policy change. While the formation and presence of an active revisionist coalition is certainly not a necessary or sufficient condition for policy change, it is plausible that policy change is more likely when there is at least one coalition in subsystem who is fighting for policy change.

These contrasting logics imply opposing hypotheses about the impact of COS on policy change.

- H_A: If the veto players logic is correct, then policy change will be *less* likely in relatively open systems with strong norms of consensus.

- H_B : If the revisionist coalition logic is correct, then we will observe the opposite; policy change will be *more* likely in relatively open systems with strong norms of consensus.

A core objective of this study is to identify which of these overarching hypotheses is more consistent with the data. A secondary objective is to enliven discussion of COS within the ACF community. Traditionally, theorists treat COS as largely exogenous stable features that characterize an entire system of government (such as democracy versus autocracy, pluralism versus corporatism, or majority versus plurality rules). These features are extremely important, but we theorize that COS can be more dynamic. Coalitions recognize the importance of opportunity structures and actively fight to change them. Revisionist coalitions struggle to create new openings and opportunities to affect the policymaking process; they attempt to create new venues and push for norms of consensus that give minority groups a seat at the table. Status quo coalitions, by contrast, advocate for structures that discourage participation and limit norms of consensus. On occasion this battle results in new institutions that fundamentally change COS and subsequent policy dynamics within a subsystem. In this view, COS are endogenous and subject to change.

We also posit that COS vary within systems of government. This is especially true in systems that include multiple levels and branches of government. In the US, for example, state governments create institutions and structures that affect the opportunities available to coalitions. These COS vary from state to state, both in the long term and in the short term. In some states, policymaking is relatively open; there are many venues and norms of consensus that give strong voice to minority groups. Others are less open and there is less room for minority input. For example, citizen initiative and referendum laws and cultures vary from state to state. Initiatives and referendums are open and common in states like California and Oregon and minority groups (revisionist coalitions) frequently use them to affect public policy. By comparison, state constitutions do not allow initiatives and referendums in states like Texas and West Virginia. This makes it more difficult for minority groups and revisionist coalitions to access and affect the policy process.

In addition to long-term variation across states, we hypothesize that short-term dynamics within states also create opportunities that affect coalition dynamics and policy change. Party control is one example.

Division of state government across parties may create short-term opportunities that encourage revisionist coalitions to form and fight for policy change because they have at least two venues to approach. If the party in control of the Governor's office (executive branch) denies them access or influence, revisionist coalitions can take their fight to the party in control of the state house or senate (legislative branch). If a single party controls the entire government, revisionist coalitions may have less incentive to form and less ability to disrupt the status quo policy. Short-term opportunities like this are important because they highlight the dynamic and nested nature of COS. In this case, stable, long-term COS (e.g., federalism and division of power) enable the possibility of divided state government, but the occurrence of division is short-term and sporadic. We expect that coalitions recognize this dynamic and attempt to exploit it when possible.

DATA AND METHODS

Dependent Variable: Policy Change

Quantitative analysis of the relationships we discuss above requires long-term data (many cases), a consistent and observable measure of policy change, and COS that vary in time and across states. Nuclear energy facility siting in the US meets all three requirements. The first full-scale nuclear energy facility (the Shippingport Atomic Power Station) was sited in Shippingport, PA in 1957. Since then, policymakers and utility companies have made hundreds of reasonably well-documented decisions about when and where to site new facilities. These decisions provide a long-term and relatively large sample of substantively comparable cases that we can use to study the impact of COS on policy change. More importantly, this sample provides a consistent and observable measure of policy outcome, the dependent variable in this analysis. In some cases, the decision to site a facility resulted in an operational facility. In others, decisions to site a facility met resistance along the way, resulting in a canceled facility.

Our focus is on a change in the pattern of outcomes of siting decisions over time. In the initial period of the series (1960–1975) the pattern shows an increasing number of siting efforts, the majority of which were successfully sited. This is consistent with the objective of US federal policy to bring nuclear technologies to bear on providing civilian benefits, rather than military threats, as outlined in President Eisenhower's

“Atoms for Peace” program in 1953 (Pilat, 2019). The policy status quo was focused on the successful siting of the nuclear energy facilities. From 1975 through 1986 the pattern changed—many siting initiatives were still in process but the success in completing the facilities dropped considerably. Following 1986 the frequency of attempts to site a facility dropped off sharply, and those still in process continued to have mixed success. For this paper, then, the *policy change* focuses on the shift from successful siting outcomes to increasing siting failures and, ultimately, waning attempts to site nuclear facilities.

We were able to identify 117 reasonably well-documented decisions to attempt to site a nuclear facility in the US between 1960 and 2007 in 38 different states. In the policy fights that ensued after each attempt was initiated, 77 facilities were opened and 40 were canceled prior to operation. In other words, the early status quo decision to site a facility was maintained in 66% of the cases; the decision was reversed, and policy change occurred in 34% of the cases. To explore these cases and their outcomes, we compiled a dataset that included a dummy variable for each outcome (0 = status quo; 1 = policy change), the expected location of the facility (state), and the year in which the final “policy” outcome occurred (the facility was opened or canceled) (Fig. 1). We then added a set of variables that measure COS and relevant covariates that serve as controls in the regression analysis.

Independent variable one: Subsystem accessibility

As noted in the previous section, the ACF defines COS along two inter-related dimensions: (1) the openness of the political system and (2) the degree of consensus required in that political system for policy change (Gupta & Ripberger 2015; Weible & Sabatier, 2007). To assess the openness of a given system, researchers explore (a) the number policymaking venues (or “veto players”) in that system and (b) the accessibility of those venues. We measured these concepts at the subsystem and state levels with three different variables.

Beginning with the subsystem, we measure the “accessibility” of the nuclear energy subsystem by way of a dummy variable that marks the establishment of the Nuclear Regulatory Commission (NRC) in 1975 (0 = pre-NRC; 1 = post-NRC). This change in the nuclear energy subsystem was significant for two reasons. First and foremost, it shattered the tightly knit policy monopoly that controlled the subsystem in the

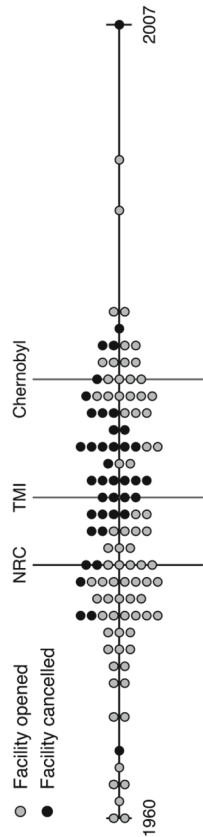


Fig. 1 Timeline of cases in the analysis

1950s and 1960s (Baumgartner & Jones, 1993). During the monopoly period, decisions about when and where to build civilian nuclear facilities were made by a select group that included the Atomic Energy Commission (AEC), the Joint Congressional Committee on Atomic Energy, a small group of scientists and engineers, and utility companies that were interested in nuclear power (Walker & Wellock, 2010). This was the only venue in town, and revisionist coalitions, who were unhappy with siting decisions, had little to no access. In 1975, the monopoly gave way, and many “outside” actors joined the subsystem, including state governments, regulatory agencies, courts, and public utility commissions. This proliferation of accessible venues provided an immediate opportunity for revisionist coalitions to enter the subsystem and fight for policy change. Second, the NRC, along with the Energy Research and Development Administration (ERDA) replaced the AEC, which was responsible for developing, promoting, and regulating nuclear energy. With this change, the ERDA (now the Department of Energy) became responsible for development and promotion, and the NRC was created as an independent agency that is responsible for nuclear facility safety and licensing (among other things). The NRC brought about a powerful institution and veto player that revisionist coalitions could use to pursue policy change. In our analysis, 40 (34%) of the policy outcomes occurred before the NRC was established and 77 (66%) occurred after it was established.

Independent Variable Two: State Policymaking Venues (Veto Players)

In the US, fights about where to site potentially hazardous and locally unwanted land use (LULU) facilities (like nuclear power plants, landfills, and prisons) are often waged on “local” turf, where state and local actors, institutions, and opportunity structures influence the decisions that are made (e.g., Aldrich, 2008; Gerrard, 1996; Lesbirel & Shaw, 2005; Weingart, 2001). Governors, state legislatures, and state agencies (including utility commissions and environmental protection agencies) often serve as veto players that facilitate or obfuscate the siting process. This is especially true in the nuclear energy subsystem, which is riddled with stories about state politicians and bureaucrats who have aligned with pro- and anti-nuclear coalitions to make sure that nuclear facilities are constructed or canceled in their states (e.g., Gerrard, 1996). Inspired by research in comparative politics (Tsebelis 1995; 2001), we account for state-level veto players with an indicator that measures party division in state government.

These divisions are important, we believe, because they create points of access (openings) for coalitions that are fighting for policy change. If a single party controls the state government, there are relatively few points of access for revisionist coalitions—that party and the bureaucracies they influence. If, on the other hand, power is divided across multiple parties and institutions, revisionist coalitions have multiple points of access—if one party/institution is unsympathetic, they can appeal to a different source of power and authority. To capture this dynamic, we classified the cases included in our analysis into one of three categories: (1) “divided legislature”—the state legislature was divided when the policy outcome occurred; (2) “united legislature, divided government”—a single party controlled the legislature, but a different party controlled the governorship; (3) “united government”—a single party had a majority in the legislature and the governorship. In our analysis, 21 (18%) of the cases were assigned to the “divided legislature” category, 42 (36%) fell into the “united legislature, divided government” category, and 54 (46%) of the cases were assigned to the “united government” category.

Independent Variable Three: State Norms of Consensus

Lastly, we accounted for state norms of consensus by measuring the referendum/citizen initiative culture in the states when the policy outcomes occurred. Referendum and citizen initiative processes were designed to check the power of state legislatures and governors, who (for a variety of reasons) can ignore the “will of the people.” Referendums and initiatives combat this by allowing citizens, minority groups, and unpopular coalitions, to craft legislation and (try to) build a consensus around their cause. In some states, such as Oregon and California, the referendum/initiative culture is extremely strong. From 1960 to 2007, an average of 7 statewide initiatives were listed each year on the Oregon ballot and 9 per year were placed on the California ballot (Initiative and Referendum Institute, 2016). Other states, like Mississippi and Illinois, average one per year, suggesting a relatively weak referendum/initiative culture. In other states, such as New York and Pennsylvania, the culture is nonexistent because state laws do not allow for citizen initiatives and referendums. To account for these differences, we used data from Initiative and Referendum Institute at the University of Southern California to count statewide initiatives and referendums by state in the 3-year period that led up to each decision.¹ In the state/years included in our analysis,

the referendum/initiative counts ranged from 0 to 7, the mean was 0.96, and the standard deviation was 1.9.

Covariate One: Subsystem Shocks (Crisis Events)

According to the ACF, subsystem shocks such as crisis events are an important (if not the most important) cause of policy change in mature subsystems, like the nuclear energy subsystem in the US. For example, within the nuclear energy subsystem incidents like Chernobyl and Fukushima are significant events that provided windows of opportunity for anti-nuclear coalitions, allowing them to mobilize public opinion in their favor, gain additional resources, and tip the balance of power within the nuclear energy subsystem (e.g., Baumgartner & Jones, 1993; Birkland, 1997; Nohrstedt, 2005; Temples, 1980).² While not the focus of this study, any analysis of policy change in the nuclear energy subsystem must account for the impacts of these accidents. Here, we accounted for them by including a dummy variable that equaled 1 if the policy outcome occurred in the wake of Three Mile Island or Chernobyl and a 0 if it did not. We defined “wake” as the 3-year period that followed each accident.³ According to this definition, 34 (29%) of the policy outcomes included in our analysis were made in the wake of an accident and 83 (71%) were not. We expect to observe a *positive* relationship between accidents and policy change. Consistent with previous research, this would confirm that facility cancellation was more likely in the wake of a crisis event.

In addition to accidents, studies like this must also account for crises driven by sudden and significant energy shocks. During this period of study, the most significant examples were oil price shocks in 1973 (driven by an OPEC embargo), 1979 (Iranian Revolution), and 1990 (Gulf War). These shocks prompted abrupt increases in US energy prices and extensive concern about energy security. It also prompted renewed conversation about the role and importance of domestic energy supplies, including nuclear energy. Like accidents, we accounted for energy crises by including a dummy variable that equaled 1 if the policy outcome occurred in the wake of a crisis and a 0 if it did not. In this case, we defined “wake” as the 2-year period that followed each price shock.⁴ By this definition, 15 (13%) of the policy outcomes included in our analysis were made in the wake of an oil price shock and 102 (87%) were not. We expect to observe a *negative* relationship between price shocks and policy

change; this would indicate that facility cancellation was less likely when oil prices spiked.

Covariate Two: State Public Opinion

The ACF also indicates that public opinion can impact policy dynamics and change. Again, the history of nuclear energy in the US supports this claim. Many studies have shown that public opinion on nuclear energy went from overwhelmingly positive to negative in the late 1970s to early 1980s (e.g., Gupta et al., 2019; Rosa & Dunlap, 1994). This dramatic shift in image gave rise to the institutional change we describe above. It led to the collapse of the policy monopoly and gave rise to the NRC, both of which opened the subsystem to anti-nuclear revisionist coalitions (Baumgartner & Jones, 1991). Changes in national opinion about nuclear energy are important, but it is also important to recognize differences in opinions about nuclear energy across states at the time in which the policy outcomes occurred. Unfortunately, we could not find enough state-level opinion data to create this measure, so we used state partisanship (as measured by Enns & Koch, 2013) as a proxy. The logic behind this proxy is straightforward. In the US, Republicans are (and have historically been) more supportive of nuclear energy than Democrats.⁵ So, states that had more Republicans at the time of the policy outcome were likely have more supporters of nuclear energy than states with fewer Republicans (and more Democrats). In the state/years included in our analysis, Republican identification ranged from 12 to 41%, had a mean of 27%, and a standard deviation of 6%. If our logic is correct, we should observe a *negative* relationship between percent Republican and policy change, which would suggest that states with more supporters of nuclear energy at the time of the policy outcome were less likely to cancel the proposed facility than states with fewer supporters.

Covariate Three: State Reliance on Nuclear Energy

Lastly, we thought it was important to include a measure that accounts for state reliance on nuclear energy. To capture this, we used *State Profiles and Energy Estimates* from the US Energy Information Administration to estimate the amount of electricity produced from nuclear power (in billion Btu) in each state at the time in which the policy decision was made. In the state/years included in our analysis, reliance on nuclear

energy ranged from 0 to 733,298 billion Btu, the mean was 94,685, and the standard deviation was 124,651 Btu. We expect to find a *negative* relationship between reliance on nuclear energy and policy change. This would show that states that were more reliant on nuclear energy at the time of the policy outcome were less likely to cancel facilities than states that were less reliant.

METHODS AND FINDINGS

To explore the impact of COS on policy change, we used a logistic regression model to predict policy change (0 = facility was sited; 1 = facility was canceled) as a function of the independent variables and covariates described above. The dependent variable thus represents a decision contrary to the initial objective to develop and expand civilian nuclear energy as envisioned in the Atoms for Peace program (Pilat, 2019). To facilitate interpretation, we used the model to calculate mean marginal effects: the estimated change in y (predicted probability of policy change) given a 1-unit change in x (the independent variables and covariates). We also scaled the numeric variables (state referendum count, percent Republican, and reliance on nuclear energy) by two standard deviations. This allowed us to directly compare the marginal effect of numeric variables to the marginal effect of binary variables in the model (Gelman, 2008). Table 1 shows these estimates.

To illustrate the substantive significance of our results and the uncertainty surrounding them, we used statistical simulations to predict the probability of policy change in various scenarios (King et al., 2000). In the simulations, we allowed the variable of interest (x) to vary while holding the remaining covariates in the model constant at values that were meant to represent the “average” state today: post-NRC, united government, sample median number of initiatives and referendums, not in the wake of an accident or an oil shock, sample median proportion of Republicans, and sample median reliance on nuclear energy.

Beginning with subsystem accessibility, the results suggest a strong relationship between the establishment of the NRC and the probability of policy change. As the estimate in Table 1 shows, the establishment of the NRC increased the probability of facility cancellation by 0.30. This was the largest positive effect we observed in the analysis. To add perspective, the simulations displayed in Fig. 2 show that the mean probability of facility cancellation was 0.09 before the NRC was established; the status

Table 1 Logistic regression model of policy change

	<i>Marg Eff</i>	<i>Std Err</i>
<i>Coalition opportunity structures</i>		
Nuclear regulatory commission (Pre-NRC versus Post-NRC)	0.30*	0.10
United legislature, divided government (versus divided legislature)	−0.21*	0.11
United government (versus divided legislature)	−0.15	0.13
Initiatives and referendums (count)	0.13*	0.09
<i>External subsystem events</i>		
Accident (versus not in the wake of an accident)	0.31*	0.12
Oil shock (versus not in the wake of an oil shock)	−0.12	0.18
Percent republican	−0.15*	0.10
Reliance on nuclear energy	−0.16*	0.11
Intercept	−0.33*	0.13
<i>N</i>	117	
Log likelihood	−5782	

* $p \leq 0.1$ in one-tailed test; DV = policy change (0 = facility became operational; 1 = facility was canceled); marginal effects were calculated at the means of the independent variables and standard errors were bootstrapped

quo policy outcome prevailed most of the time. After the NRC was established, the mean probability of cancellation jumped to 0.34, indicating that policy change was much more likely following the establishment of the NRC. This result is consistent with the revisionist coalition logic in H_B ; policy change was much more likely when the subsystem transitioned from a policy monopoly to a more accessible subsystem with an independent regulatory agency.

State policymaking venues also had a statistically and substantively significant effect on the probability of facility cancellation. As Fig. 2 shows, facility cancellation was most likely when different parties were in control of the state legislature at the time of the policy outcome. In those cases, the simulated mean probability of cancellation was 0.52. The distinction between united legislature, divided government, and united government was less significant. In those scenarios, the simulated mean probability of policy change was only 0.26 and 0.34, respectively. The marginal effects in Table 1 reflect these differences. In comparison to divided government, united legislature, divided government reduced the probability of policy change by 0.21; united government reduced the

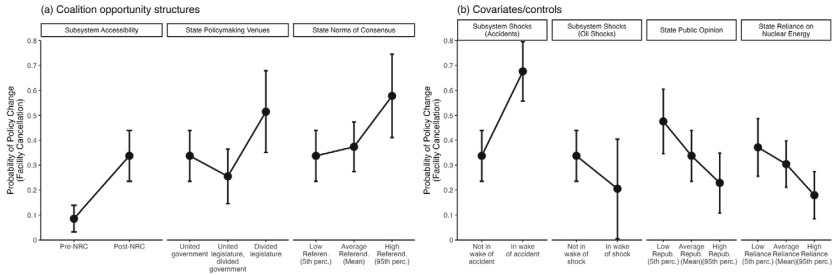


Fig. 2 Predictions from logistic regression model of policy change

probability of cancellation by 0.15. Again, this result is generally consistent with the revisionist coalition logic in H_B ; facility cancellation was more likely when there were multiple points of access (different parties in the legislature) for revisionist groups to peruse.

State norms of consensus had a statistically significant but relatively small impact on facility cancellation. On average, policy change was more likely in states with a recent history of referendum/initiative at the time of the policy outcome. The marginal effect of a 1-unit increase in the referendum/initiative count variable was 0.13. The simulations help to visualize this difference. In states where referendums and initiatives were very rare at the time of the policy outcome (5th percentile), the mean probability of cancellation was 0.34; in average states at the sample mean, the probability of policy change was 0.37; and in states with a high number of referendums and initiatives leading up to the outcome (95th percentile), the probability was 0.58. As with subsystem accessibility and state policymaking venues, this finding is supports H_B ; policy change was more likely in states with strong norms of consensus as evidenced by relatively frequent referendums and initiatives that gave voice to minority groups.

Turning now to the covariates, the results clearly show that accidents had a significant impact on policy change. In “normal” periods (not in the wake of an accident), the simulated mean probability of facility cancellation was 0.34; in the wake of an accident, the probability of policy change went up to 0.68. The marginal effect was 0.31, the largest negative and largest overall effect we observed in the analysis. This finding is consistent with previous studies that discuss the negative influence of accidents on public perceptions and nuclear facility siting (De Boer & Catsburg, 1988;

Gupta et al., 2019; Kim et al., 2013). It is also consistent with previous studies that use the ACF to highlight the impact of subsystem shocks on policy change (Nohrstedt 2005, 2008, 2010; Rinscheid, 2015).

Contrasting the strong positive impact of accidents, the results suggest that oil price shocks had a weak negative impact on policy change, though the relationship was not statistically significant. In “normal” periods (not in the wake of a price shock), the simulated mean probability of facility cancellation was 0.34; following significant price shocks, the probability of policy change fell to 0.21. While the difference is not statistically significant, the direction of the relationship is consistent with our expectation that nuclear energy facilities were less likely to be canceled when oil prices were historically high and energy security was a top concern.

There was also a modest but statistically significant relationship between state public opinion and policy change. On average, facility cancellation was less likely in strong Republican states where, presumably, a larger proportion of the population supported nuclear energy at the time of the policy outcome. The marginal effect was -0.15 and the simulations revealed slight decrease in the mean probability of cancellation when comparing states with a low (5th percentile), average (mean), and high (95th percentile) proportion of Republicans. The mean probability of policy change went from 0.48 to 0.34 to 0.23, respectively. Though modest, the direction of this finding aligned with our expectations.

Like state public opinion, state reliance on nuclear energy had a modest negative impact on policy change. Facility cancellation was less likely in states that were more reliant on nuclear energy at the time of the policy outcome. The marginal effect was -0.17 and the simulated mean probability of cancellation went from 0.37 to 0.30 to 0.18 in states where reliance was low (5th percentile), average (mean), and high (95th percentile), respectively. Again, this finding was consistent with our expectation that states were less likely to cancel facilities if they were highly reliant on nuclear energy.

CONCLUSION

The role of COS within ACF needs theoretical refinement and empirical testing. With this research, we advance our understanding of the relationship between COS and policy change, both theoretically and empirically. To accomplish this, we started with noting a theoretical conflict in the literature. Competing logics exist for how COS can influence policy

change in relatively open systems; in one setting, relatively open systems with strong norms of consensus encourage revisionist coalitions to form and fight for policy change, thereby making policy change more likely. In a competing setting, policy change can be slow and difficult in relatively open systems with many decision-making venues that require consensus from multiple veto players, especially if the veto players have different incentives and policy beliefs. We test these two logics using a unique dataset on nuclear facility siting in the US. We use both subsystem level and sub-national variables to measure variation in COS and examine how these variations impact the probability of facility cancellation. The findings reveal consistent support for the revisionist coalition logic—policy change was *more* likely when the subsystem was more open and there were strong norms of consensus, allowing revisionist coalitions to have an opportunity to challenge the status quo, which led to policy change.

Additionally, we made three assertions that challenge the current notion of COS in the ACF. First, we argued that sub-national features of federal political systems create COS that influence the probability of policy change in subsystems that are governed by state and local policy-makers. Second, we argued that features of the subsystem itself can also create COS that influence the probability of policy change in subsystems that evolve over time. Finally, we suggested that these sub-national and subsystem level COS can (and do) vary within countries over relatively short periods of time and space. Though preliminary, our exploration of policy change in the nuclear energy subsystem in the US provides empirical support for these assertions. The establishment of the NRC, which made the subsystem more open and accessible, increased the likelihood of policy change in the subsystem. Political divisions in state government did the same thing as did norms of consensus, both of which varied over time and across states to influence the probability of facility cancellation.

These assertions and findings challenge the current conceptualization of COS in the ACF, which focuses on national features that are static over long periods of time. Though useful, we believe that widely held conceptualization of COS as largely static and consistent across states limits the explanatory power of institutions (and institutional change) in the ACF. Moreover, the current conceptualization limits the vitality of the framework to broad national comparisons, which are interesting, but pose inferential challenges because there are many unobservable differences between countries that may, or may not, affect the policymaking process. The conceptualization of COS that we have offered in this research

enhances to conceptual and explanatory power of institutions within the framework and, simultaneously, provides the leverage (controlled variation) necessary to identify and systematically study the role of institutions in the policymaking process.

As research continues in the direction, we urge researchers that are interested in the ACF to continue exploring the pathways through which COS (and institutions more generally) influence subsystem dynamics and policy change. To date, researchers have shown that COS can influence the composition of subsystems, coalition behavior, and the probability of policy change within a given subsystem. In most cases (including this analysis), researchers treat COS as exogenous forces that impact coalitions and subsystems they inhabit. Though useful, this treatment overlooks the likelihood that coalitions can sometimes create or modify the COS that surround them. Indeed, one could argue that the anti-nuclear coalition accomplished this with the establishment of the NRC; they fought to create the opportunity structure that subsequently influenced their success in combatting decisions to site nuclear power plants around the country. Given this possibility, we suggest that future studies also explore the origins of COS, with a particular emphasis on the endogenous forces that may have influenced their creation.

To facilitate this exploration, researchers should continue thinking about conceptualization, operationalization, and measurement. In this analysis, we offer a new, more dynamic conceptualization of COS. We hope that this conceptualization will serve as a useful foundation as scholars continue to develop better, more nuanced measures that capture the number of decision-making venues that are available to subsystem actors, the accessibility of those venues, and the norms of consensus that govern policymaking in those venues.

NOTES

1. Note that cases received a 0 for one of two reasons: 1) the decision was made in an initiative or referendum state that did not hold an initiative or referendum in the 5-year period that led up to each decision, or 2) the decision was made in a state that does not allow initiatives or referendums. Initially, we accounted for this difference by including a dummy variable in the model we present in this analysis. The dummy variable had little effect on the model (it was insignificant, it did not influence the referendum/initiative

- coefficient or standard error, and it did not improve model fit). As such, we opted for the parsimonious model in this analysis.
2. To be clear, whether external events are actually “external” depends on the boundaries of the subsystem in question. For instance, in this case, some might argue that the partial meltdown at the Three Mile Island Nuclear Generating Station in Pennsylvania was an “internal” shock to the US nuclear subsystem because it happened within the country, whereas the accident at the Chernobyl Nuclear Power Plant in Ukraine was an “external” shock to the US nuclear subsystem because it occurred outside of the country. These distinctions can be important, but difficult to define in subsystems that span national boundaries. In this study, accidents/shocks are not the primary focus, so the distinction is less important.
 3. In other analyses, we used a 5-year period, and the results were similar.
 4. The 1979 price shock overlapped with the Three Mile Island (TMI) accident, which also occurred in 1979. To avoid collinearity in the dummy variables, the 1979 price shock was not included in this operationalization.
 5. For more information on the relationship between partisanship and support for nuclear energy, see Jenkins-Smith and Smith 1994.

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Learning and Uncertainty: Information Environments and Policy-Oriented Learning

Matthew C. Nowlin

INTRODUCTION

Policy-oriented learning is one of the central theoretical foci of the Advocacy Coalition Framework (ACF). Indeed, the ACF is the only major policy process theory that incorporates policy learning as a critical focus. In brief, learning within the ACF is understood as shifts in attitudes and behaviors associated with changes in beliefs and/or belief systems. Despite its importance, policy-oriented learning is the least examined aspect of the ACF, likely because it is difficult to conceptualize and measure (Henry et al., 2022; Pierce et al., 2017; Zaki et al., 2022).

Recent work has posited that policy-oriented learning can conceptualize beliefs as probability distributions with a central tendency and variance. Conceptualized in this way, learning is understood as a shift in either the central tendency or the variance of the belief distribution (Nowlin, 2021, 2024). Additionally, this work gives information and information processing a central role in learning, where information is understood as signals, and those signals are processed and weighted relative to prior beliefs. Learning occurs only when the information signal is

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sufficiently strong to shift prior beliefs in the direction of the information. Finally, with this approach, policy-oriented outcomes are a result of information processing and can include belief change, defined as a shift in the central tendency of the belief, and belief reinforcement, defined as a reduction in variance.

The ACF work on learning has noted that learning is more likely to occur in some contexts rather than others, including intermediate levels of conflict, an issue that has analytical tractability, and discussion within professionalized forums (Nohrstedt et al., 2023). However, less work has examined the impact of information environments on policy learning. Information environments include the type and availability of possibly relevant information for policymaking. The types of information can range from scientific or technical information about policy problems or policy instruments to political information about public and interest group support for policy proposals. Additionally, information environments can vary in the availability or accessibility of information. Is there a lot of high-quality information about the policy issue, or is the issue not yet well understood? Is information about the issue widely shared, or is it held within cloistered epistemic communities? Finally, information environments are dynamic and shift as new information comes to light, or an exogenous shock, such as a focusing event, alters both the type and availability of information.

In this chapter, I develop and test a hypothesis about learning and the nature of the information environment, particularly with regard to the availability of information. I posit that an information environment where information is widely available can create strong enough information signals to result in policy learning. To test this hypothesis, I combine a decade of public opinion surveys, from 2013 to 2023, to explore policy learning regarding the policy core beliefs (i.e., perceptions of risk) associated with nuclear energy and climate change. Nuclear energy and climate change are both scientific and technical issues that are polarized across belief systems. However, the information environments of the two issues vary, with climate change being a more salient issue that receives more media and political attention than nuclear energy. I explore learning regarding nuclear energy and climate change overall, as well as across several types of deep core beliefs, including cultural worldviews, environmental orientation, and political ideology.

It should be noted that the ACF is concerned with the beliefs of policy elites within advocacy coalitions, not public opinion, and there are

some limitations in what can be inferred about elite policy actors from samples of the mass public. However, previous research has indicated that the belief systems of elites and the public are structured similarly (Herron & Jenkins-Smith, 2002; Jenkins-Smith et al., 2004; Tumlison & Song, 2019). With the similar structure of belief systems, it is likely that the dynamics of policy learning associated with beliefs would be similar across elite and public samples. These dynamics include beliefs as probability distributions and the likelihood that belief change is a function of the strength of the belief, the strength of information signals, and how those signals are weighed. Finally, using data from the mass public provides the advantage of larger sample sizes and more variation in beliefs.

Overall, I find that learning as belief change (i.e., significant shifts in central tendencies) occurred overall and among all types of deep core beliefs for both nuclear energy and climate change between 2013 and 2023. In addition, I found that variance *increased* in the whole sample for both issues over the ten years. An increase in variance regarding beliefs is indicative of increased uncertainty about those beliefs. However, the results around uncertainty varied by deep core beliefs and policy issues, with nuclear energy showing increased variance across all types of beliefs and climate change only showing increased variance among individualists, those low in environmental orientation, and conservatives. These results connect to the impact of the information environment. Specifically, I found an effect for information availability, measured as the number of articles in the *New York Times* each year, for climate change (but not nuclear energy) where the risk perception of climate change increased as the availability of information increased, all else equal. Finally, the magnitude of changes in uncertainty was larger for nuclear energy, where less information was available. These results point to the importance of considering the information environment in the context of policy-oriented learning. In addition, the results also show that increase in uncertainty—the opposite of belief reinforcement—is a possible learning outcome that needs more consideration.

POLICY-ORIENTED LEARNING

The ACF is concerned with what it terms policy-oriented learning. The textbook definition of policy-oriented learning comes from the 1993 ACF book, which defines policy-oriented learning as “enduring alterations of thought or behavioral intentions that result from experience and which

are concerned with the attainment or revision of the precepts of the belief systems of individuals or collectives (such as advocacy coalitions)” (Jenkins-Smith & Sabatier, 1993, p. 42). Policy-oriented learning involves cognitive processes that are associated with policy-relevant beliefs, and the outcomes of policy-oriented learning are reflected in changes in beliefs and/or behaviors (Heikkila & Gerlak, 2013; Henry et al., 2022).

Within the ACF, policy-relevant beliefs are part of a belief system that consists of three tiers—deep core beliefs, policy core beliefs, and secondary beliefs—that range from general, abstract beliefs to specific beliefs. *Deep core beliefs* are the most abstract and include fundamental beliefs. They operate across policy issues and subsystems and shape the processing of policy-relevant information (Kahan, 2012; Nohrstedt et al., 2023). Deep core beliefs have been measured in multiple ways, including political ideologies (Zafonte & Sabatier, 1998) and environmental beliefs (Henry et al., 2011; Henry & Dietz, 2012; Matti & Sandström, 2011). However, recent work has emphasized cultural worldviews drawn from cultural theory as measures of deep core beliefs (Hornung & Bandelow, 2021; Jenkins-Smith et al., 2014; Ripberger et al., 2014; Sotirov & Winkel, 2016).

Cultural theory focuses on beliefs about ideal social structures and social relationships, and these beliefs form the basis of cultural worldviews. In short, cultural theory says that there are four possible worldviews, including hierarchy, egalitarianism, individualism, and fatalism (Thompson et al., 1990). Beliefs associated with the hierarchy worldview assume that society works best when where there are clear lines of authority and an individual’s behaviors and role in society are prescribed by those authorities. Egalitarianism is based on the equality of individuals, as opposed to a hierarchy of authority, and concern for the well-being of collectives over that of individuals. The individualism worldview is also based on the equality of individuals but views individual freedom as paramount to the well-being of collectives. Finally, fatalism is based on a recognition of the inability of individuals to control what happens to them, coupled with a belief that individuals should do the best they can on their own.

Following deep core beliefs are *policy core beliefs* which are informed and constrained by deep core beliefs. Policy core beliefs are about particular issues and operate within the bounds of a specific subsystem. They contain both a normative component (e.g., “local residents should have a

say when determining the siting of a nuclear waste facility”) and an empirical component (e.g., “the average concentration of carbon dioxide in the atmosphere is more than 420 ppm”). Further, policy core beliefs include how the policy issue is understood or defined, the causes of the problem, whose welfare should be paramount, and the possible impacts of various policy alternatives (Nohrstedt et al., 2023). Finally, *secondary beliefs* are the most specific beliefs and deal primarily with beliefs about the means to obtain policy goals. Secondary aspects are shaped by both deep core and policy core beliefs.

Policy-oriented learning involves changes in any of three types of beliefs. However, the likelihood of change varies according to the kind of belief. Generally, secondary beliefs are the most likely to change, and deep core beliefs are the least likely to change. Another outcome of policy-oriented learning is belief reinforcement rather than belief change. Belief reinforcement occurs when beliefs are strengthened over time rather than changed. Overall, belief reinforcement, not belief change, tends to be the most likely learning outcome (Pattison, 2018; Weible et al., 2023).

One way to reconcile policy-oriented learning outcomes as both belief change and reinforcement is to view beliefs as probability distributions with central tendencies (the beliefs) and variance (uncertainty) about the belief (Nowlin, 2024). Characterizing beliefs as probability distributions allows for a model of learning that includes both learning (i.e., a change in belief) and reinforcement. Learning occurs when there is a shift in the central tendency, and reinforcement occurs when there is a decrease in variance. Modeling policy-oriented learning in this way predicts four possible outcomes, including no learning, belief reinforcement, belief change, and belief change and reinforcement.

A central challenge in understanding policy-oriented learning is identifying the conditions that make learning, particularly between advocacy coalitions, more likely. Early work noted three factors that shape learning, including the level of conflict surrounding the issue, the analytical tractability of the problem, and the nature of the forum in which the issue is discussed (Jenkins-Smith & Sabatier, 1993). Building on these initial insights, several hypotheses regarding policy-oriented learning have been developed and tested.

There are five key hypotheses regarding policy-oriented learning (see Nohrstedt et al., 2023). One hypothesis related to the level of conflict posits that learning is more likely to occur in conditions of intermediate conflict between two coalitions. With high levels of conflict, deep core

and policy core beliefs are likely threatened and, therefore, need to be defended. As a result, beliefs tend to harden and become less responsive to change. However, with intermediate levels of conflict, it is likely that secondary beliefs, as opposed to deep or policy core beliefs, are in dispute, and such beliefs are more susceptible to change. Another hypothesis states that learning is more likely in policy forums that are both (a) important enough to induce widespread participation and (b) involve professional norms (Jenkins-Smith & Sabatier, 1993). Two additional hypotheses focus on analytical tractability and the nature of the data available. Specifically, learning is more likely when (1) high-quality and generally accepted data is available about the policy issue and (2) natural systems, as opposed to social or political systems, are involved. A final hypothesis posits that even when cross-coalition learning does not occur, short-term learning is possible through learning by policy brokers. Each of these hypotheses points to the importance of context for policy learning, and another potentially significant context deals with the nature of the information available. Recent work has incorporated information processing into policy-oriented learning (Nowlin, 2021), yet little work has examined how the information environment, specifically the overall availability of policy-relevant information, could impact learning. In the next section, I describe how information processing and information environments might influence policy-oriented learning.

INFORMATION ENVIRONMENTS AND INFORMATION PROCESSING

Policy actors are inundated with both relevant and not-so-relevant information. Information is understood as “signals” that emanate throughout the policymaking system (Jones & Baumgartner, 2005; Workman et al., 2009). There is more information available than policy actors or institutions can process. Therefore, responses to information signals are disproportionate, with many signals ignored and only a few receiving attention or acted upon. While the overall policymaking system is awash in information of various kinds, specific policy subsystems vary in their information environments.

Information environments involve the nature of available information within policy subsystems. Information environments can generally vary by the *type* of information and the *availability* of information. Early work and development in the ACF focused on the role of scientific and

technical information and analysis, and two learning hypotheses relate to the type of information available, including high-quality data and data regarding natural rather than social systems. As noted, that type of expert information is limited in how it contributes to learning as belief change.

The availability of information involves the degree to which information about the issue is accessible in the subsystem. Within some policy subsystems, information is limited to epistemic communities or held by policy actors for strategic purposes, whereas in other subsystems, information is widely shared. Widely shared information from a variety of sources is known as *entropic* and is typically associated with the understanding or defining of a problem, whereas expert information is largely focused on developing solutions to problems (Baumgartner & Jones, 2015). While expert information has been the major focus of the ACF, the availability of information is likely an important factor in policy-oriented learning and change. Indeed, policy change becomes more likely as information becomes more widely available (Beaulieu-Guay et al., 2023). Information availability is likely associated with increased attention that can disrupt the feedback patterns that contain policymaking within subsystems and dampen prospects for change (Baumgartner et al., 2002, 2023; Jones & Baumgartner, 2005).

The nature of information environments is dynamic and evolving. Indeed, the changing nature of information within a subsystem is associated with punctuated policy changes happening as information changes to include new issues or new attributes of existing issues (Baumgartner et al., 2023; Baumgartner & Jones, 2015; Jones & Baumgartner, 2005). Additionally, focusing events can significantly shift an information environment causing a deluge of new information and shifts in attention (Birkland, 1997; Nohrstedt & Weible, 2010). As the information environment changes, learning becomes more likely.

Building on the information processing literature, recent work has examined the role of information and information processing in policy-oriented learning (Nowlin, 2021). Specially, this approach places learning in a Bayesian framework and posits that learning—among individuals or collectives—is a function of the strength of prior beliefs, the strength of the information signal, and how that signal is weighted. With this model, learning occurs when beliefs shift in the direction of the information. Yet, strong prior beliefs require a strong information signal for learning to occur. However, policy actors are unable to process all relevant information. Further, policy actors are motivated reasoners and will only attend

to some information and weigh that information in various, disproportionate ways. The original work on motivated reasoning (Kunda, 1990) noted that individuals may be motivated for accuracy or for consistency with existing beliefs (i.e., priors). When motivated for accuracy, policy actors will seek out the highest quality information, weigh it appropriately, and allow for beliefs to shift. However, when motivated for consistency, policy actors will only seek out confirming information and negatively weigh information that is inconsistent with prior beliefs, and the only learning that would occur would be belief reinforcement.

The type of information processing and reasoning that occurs is, in part, a function of context, including the nature of the subsystem, its level of conflict, and the information environment. For example, reasoning for accuracy may occur in subsystems where the problem is clearly defined, and the solution is in the application of expert, scientific, or technical knowledge (Baumgartner & Jones, 2015). Consistency motivations are likely in adversarial subsystems where deep core and/or policy core beliefs are contested (Jenkins-Smith & Sabatier, 1993; Weible, 2008). In addition, the availability of information in the information environment likely shapes information processing. Among contested and polarized issues in adversarial subsystems, more information tends to lead to increased polarization (Jerit & Kam, 2023; Kahan et al., 2011; Kahan, 2013). However, an information environment that creates a strong information signal with information that is ubiquitous and consistent enough to saturate and overpower other information could lead to all policy actors learning by shifting beliefs toward the information. Such strong information signals could overcome the motivated reasoning of some policy actors.

THE ISSUES OF NUCLEAR ENERGY AND CLIMATE CHANGE

In this chapter, I examine policy-oriented learning associated with nuclear energy and climate change in the United States. Both issues contain scientific and technical elements and beliefs about both issues are contested based on deep core beliefs. However, the information environments of the issues differ as climate change is a more salient policy issue than nuclear energy and receives more attention from the media, Congress, and the president. According to data from the Comparative Agendas Project, the US Congress held 134 hearings on climate change versus 41 for nuclear energy between 2013 and 2021, the most recent year data is available. Additionally, climate change was mentioned 62 times in presidential State

of the Union speeches from 2013 to 2023, whereas nuclear energy was not mentioned at all.¹ As a result of the higher levels of attention paid to climate change, information about it is more readily available than is information about nuclear energy, thus creating a different information environment.

As noted, the issues of nuclear energy and climate change are both polarized across various deep core beliefs. Additionally, various deep core beliefs tend to line up on different sides of the issues, particularly around risk perceptions. In general, those who view nuclear energy as less risky also view climate change as less dangerous, and vice versa. For cultural worldviews and nuclear energy, hierarchs and individualists are generally supportive of nuclear energy, and egalitarians are less supportive (Greenberg & Truelove, 2011; Jones, 2011; Peters & Slovic, 1996; Truelove & Greenberg, 2013). Regarding climate change, egalitarianism is associated with perceiving the most risk from climate change, and individualism perceives the least risk (Jones, 2011; Kahan et al., 2012; Nowlin & Rabovsky, 2020).

Apart from cultural worldviews, environmental orientation informs views on nuclear energy and climate change, with those more concerned about the environment and climate change being less supportive of nuclear energy than those less concerned about climate change (Spence et al., 2010; Ter-Mkrtchyan et al., 2022; Truelove & Greenberg, 2013). Finally, with political ideology, liberals and Democrats view nuclear energy and climate change as riskier than conservatives and Republicans (Besley & Oh, 2014; Dunlap et al., 2016; Hawes & Nowlin, 2022; Kuklinski et al., 1982; McBeth et al., 2023).

HYPOTHESIS

Policy-oriented learning involves cognitive functions of belief systems interacting with policy-relevant information. Beliefs can be thought of as probability distributions and possible learning outcomes include no learning, belief reinforcement, belief change, and belief change and reinforcement (Nowlin, 2024). Belief change occurs when the central tendency of a belief shifts, and belief reinforcement occurs when the

¹ The data comes from the website of the Comparative Agendas Project here: <https://www.comparativeagendas.net/>. The 705 subtopic was used to determine attention to climate change, and the 801 subtopic was used for nuclear energy.

variance of a belief is reduced. Belief reinforcement is the most likely outcome, yet the potential for belief change is affected by the context of the policy issue and subsystem. Learning as belief change is least likely in adversarial subsystems with high levels of conflict involving deep core beliefs (Jenkins-Smith & Sabatier, 1993; Nohrstedt et al., 2023; Weible, 2008). However, the information environment, particularly the availability of information, may help induce policy-oriented learning by producing strong enough information signals to shift beliefs. Along these lines, I posit the following hypothesis:

H1: The likelihood of policy-oriented learning increases as the availability of information increases

In the next section, I describe the data and measures used to test the hypothesis.

DATA AND MEASURES

To test the hypothesis, I draw on data from a decade's worth, 2013–2023,² of nationwide surveys of US residents. As noted, public opinion serves as a sufficient proxy for elite opinion because the belief systems of the mass public and elites are structured similarly, and the dynamics of policy-oriented learning are likely similar. In each survey, respondents were asked about their views on energy and environmental issues, including nuclear energy and climate change. Additionally, the surveys gauged the deep core beliefs of respondents by including measures of cultural worldviews, political ideology, and environmental orientation. The surveys were developed and administered by the Institute for Public Policy Research and Analysis at the University of Oklahoma and fielded annually. The samples for each survey were recruited by firms including Survey Sampling International and Qualtrics, and quotas were used to ensure that the samples were representative of the US population. Overall, the combined surveys include 23,842 respondents.

² Data collected in 2019 is not included because of question-wording changes.

Policy-Oriented Learning

Learning is one of the more challenging parts of the ACF to conceptualize and measure. As described in Henry et al. (2022), learning has been measured at the individual level through self-reporting on surveys or in interviews, and changes in beliefs are measured directly (e.g., through surveys) or indirectly (e.g., through media quotes or congressional testimony). At the subsystem level, learning has been measured as correlations between information accumulation and policy change (Henry et al., 2022, pp. 118–119). More recently, learning has been measured as changes in the probability distributions of beliefs (Nowlin, 2024).

For the following analysis, I leverage the combined survey data to measure learning as a change in the aggregate distribution of beliefs from time t_1 to time t_2 . Specifically, I compare the distribution (i.e., mean and variance) of policy core beliefs about nuclear energy and climate change in 2013 to those in 2023. Significant shifts in beliefs between 2013 and 2023 would be indicative of learning among the public on average.

Deep Core Beliefs

Several measures of deep core beliefs were collected, including cultural worldviews, environmental orientation, and political ideology.

Cultural Worldviews

The cultural worldviews derived from cultural theory—hierarchy, egalitarianism, individualism, and fatalism—were measured using agreement, on a 0 (not at all) to 10 (completely) scale, with statements representing each of the four worldviews. Respondents were asked to *Please rate the degree to which each of the following four groups of statements describes your outlook on life, using a scale from zero to ten, where zero means not at all and ten means completely.* The statements were presented in random order. In addition, dummy variables were constructed for each worldview for subgroup analysis, with a value greater than or equal to 8 on the 0 to 10 scale given a 1 for that worldview and a value of 7 or less given a 0.

Hierarchy

The hierarchy worldview was measured with the following statement:

I am more comfortable when I know who is, and who is not, a part of my group, and loyalty to the group is important to me. I prefer to know who is in charge and to have clear rules and procedures; those who are in charge should punish those who break the rules. I like to have my responsibilities clearly defined, and I believe people should be rewarded based on the position they hold and their competence. Most of the time, I trust those with authority and expertise to do what is right for society.

The mean for the 0 to 10 hierarchy scale is 5.63. The mean for the hierarchy dummy is 0.28, which indicates that 28 percent of the sample could be classified as hierarchs.

Egalitarianism

Egalitarianism was measured with the following statement:

My most important contributions are made as a member of a group that promotes justice and equality. Within my group, everyone should play an equal role without differences in rank or authority. It is easy to lose track of what is important, so I have to keep a close eye on the actions of my group. It is not enough to provide equal opportunities; we also have to try to make outcomes more equal.

The mean of the 0 to 10 egalitarianism scale is 5.37, and the mean of the egalitarian dummy is 0.26.

Individualism

The statement for individualism was:

Groups are not all that important to me. I prefer to make my own way in life without having to follow other peoples' rules. Rewards in life should be based on initiative, skill, and hard work, even if that results in inequality. I respect people based on what they do, not the positions or titles they hold. I like relationships that are based on negotiated "give and take," rather than on status. Everyone benefits when individuals are allowed to compete.

The individualism measure has a mean of 5.98 on the 0 to 10 scale, and the dummy variable has a mean of 0.34.

Fatalism

The fatalism statement was:

Life is unpredictable and I have very little control. I tend not to join groups, and I try not to get involved because I can't make much difference anyway. Most of the time other people determine my options in life. Getting along is largely a matter of doing the best I can with what comes my way, so I just try to take care of myself and the people closest to me. It's best to just go with the flow, because whatever will be will be.

The mean of the 0 to 10 fatalism statement is 4.84, and the mean for the dummy variable is 0.21.

Environmental Orientation

The measure of environmental orientation combined and averaged two questions, one about the fragility of nature and the second about how threatened the natural environment is. Each question used a 0 to 10 scale. In addition, I created dummy variables for high environmental orientation, with a value of 8 or more on the 0 to 10 coded as 1, and low environmental orientation, with a value of 5 or less coded as 1.³

The two questions for environmental orientation were:

On a scale from zero to ten, where zero means that nature/mother nature is robust and not easily damaged and ten means nature is fragile and easily damaged, how do you view nature?

On a scale from zero to ten, where zero means the natural environment is not at all threatened and ten means the natural environment is on the brink of disaster, how do you assess the current state of the natural environment?

The scales were combined and averaged, and the mean of the combined scales is 6.3. The mean of the dummy variable for high environmental orientation is 0.34, and the mean for low environmental orientation is 0.295.

Political Ideology

Political ideology was measured by asking respondents to self-report on a 1 to 7 scale, with 1 being strongly liberal, 2 = liberal, 3 = slightly liberal, 4 = middle of the road, 5 = slightly conservative, 6 = conservative, and 7 = strongly conservative. The mean of the 1 to 7 scale is 3.98. Additionally, I created a conservative dummy variable with values of 5 and greater

³ 5 was chosen as the cut-off for low environmental orientation because a number less than 5 resulted in a low sample size.

as a 1 and a liberal dummy variable with values of 3 or less coded as a 1. The mean for the conservative dummy is 0.33 and 0.34 for the liberal dummy variable.

Policy Core Beliefs

Policy core beliefs are beliefs about a particular policy issue and are typically contained within a subsystem. To measure the policy core beliefs of nuclear energy and climate change, I drew on questions of risk perceptions. The degree to which nuclear energy or climate change poses a risk can be considered a policy core belief because it is informed by deep core beliefs (Greenberg & Truelove, 2011; Peters & Slovic, 1996) and can shape secondary beliefs.

The risk perception of nuclear energy was measured with the following question:

Using a scale from one to seven, where one means the risks of nuclear energy far outweigh its benefits, four means the risks and benefits are equally balanced, and seven means the benefits of nuclear energy far outweigh its risks, how do you rate the overall balance of the risks and benefits of nuclear energy in the U.S.? Remember, you can choose any number from one to seven.

The responses were reverse coded, so a higher number means more risk associated with nuclear energy. The mean for nuclear energy risk perception is 3.82.

The climate change risk measure was:

On a scale from zero to ten, where zero means no risk and ten means extreme risk, how much risk do you think global warming poses for people and the environment?

The mean for climate change risk is 7.2.

Information Environment

The measure of information environment is the number of articles in the *New York Times* about nuclear energy and climate change each year from 2013 to 2023. Media coverage has been used as a proxy for information environments in previous studies (e.g., Jerit et al., 2006), and

prior research indicates that, in general, political knowledge among the mass public rises as more information is made available through the media (Jerit & Barabas, 2012, p. 673). Additionally, views on nuclear energy and climate change are responsive to media coverage (Besley & Oh, 2014; Feldman et al., 2014; Gamson & Modigliani, 1989; Mazur, 1981; Merkley & Stecula, 2021; Zhao et al., 2011). Finally, media exists as an “amplifier” of signals about risk (Kasperson & Kasperson, 1996; Kasperson et al., 1988).

To determine the number of articles per year, I searched the *New York Times* database using the keywords “nuclear energy” and “climate change” or “global warming” for each year, 2013 to 2023. Overall, climate change received far greater coverage than nuclear energy, creating an information environment where information is more available and attention is greater for climate change than nuclear energy. The average number of articles per year from 2013 to 2023 about nuclear energy was 124.76, and the average for climate change was 969.44. In addition, nuclear energy had a minimum number of 52 articles in a year and a maximum of 227 articles. Climate change had a minimum of 438 and a maximum of 1556 articles in a year.

Finally, I control for several variables in the following analysis including partisanship and demographics. For partisanship, I use dummy variables for Republicans and independents, with Democrats as the excluded referent. The demographic variables include age, gender (male = 1), race (white = 1), and education (completed college = 1).

ANALYSIS AND RESULTS

To examine learning over the ten years, the analysis precedes through several steps. First, I examine the differences in means and variances for the risk perception measures in 2013 and 2023. Second, I pool the data to investigate the influence of deep core beliefs—cultural worldviews, environmental orientation, and political ideology—on risk perceptions. Third, I explore the changes in risk perceptions over the ten-year period for the various deep core beliefs, including hierarchs, egalitarians, individualists, fatalists, high and low environmental orientation, conservative, and liberal. Finally, I compare the differences in means and variances for each deep core belief subgroup to determine if policy-oriented learning occurred.

I start with the mean and variance of risk perceptions in the year 2013 and the year 2023. For nuclear energy, the mean risk perception in 2013 was 3.94, and the variance was 2.37. However, by 2023, the mean was 3.72, and the variance was 2.88. The decrease in the perceived risk of nuclear energy indicates that learning understood as a change in the central tendency and/or a change in the variance, occurred.

For the climate change risk perceptions, the mean (variance) in 2013 was 6.84(6.83), but by 2023 the mean (variance) was 7.28(7.77). As with nuclear energy, the changes in means and variances indicate that learning occurred.

To examine the distribution of risk perceptions for nuclear energy and climate change, I plot the densities of the distributions. The plots of the kernel density estimations are shown in Fig. 1. Figure 1 also notes the differences of means and variances and their statistical significance using a *t*-test for differences of means and a variance test for differences in variance.

As shown in Fig. 1, the means and variances were significantly different for nuclear energy and climate change risk perceptions from 2013 to 2023. Looking first at nuclear energy, the mean risk perceptions decreased by -0.225, and the variance increased by 0.511. For climate change, Fig. 1 shows that risk perceptions increased significantly by 0.443 as did the variance by 0.938. These results show that, across all respondents, learning

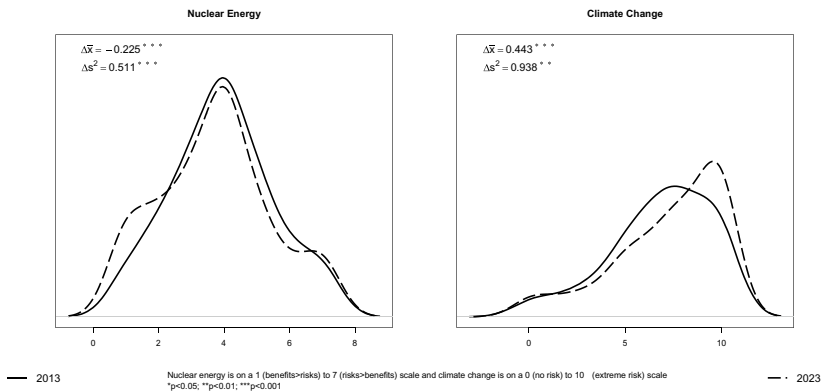


Fig. 1 Density plots of nuclear energy and climate change risk perceptions in 2013 and 2023

as belief change occurred for both nuclear energy and climate; however, the variance increased for both issues from 2013 to 2023. The increase in variance could be indicative of (a) an overall increase in uncertainty across all deep core beliefs, (b) an increase in polarization of beliefs between different groups that hold different deep core beliefs, or (c) an increase in uncertainty among some groups sufficient to move the average of the whole sample. In subsequent analysis, I compare belief changes from 2013 to 2023 across multiple groups of deep core beliefs.

Next, I pooled all the data and did an OLS regression to explore the relationships between deep core beliefs and the information environment with risk perceptions of nuclear energy and climate change. Note that the NYT articles measure is logged because of the scale of those measures relative to the other variables. The results of the OLS analysis are shown in Table 1.

Looking first at the results for nuclear energy risk perceptions in Table 1, we see that increasing hierarchy, individualism, fatalism, and conservatism were associated with decreasing levels of the perceived risk of nuclear energy. Increasing environmental orientation was associated with increasing perceived risk. These results are consistent with prior research. For the information environment, the number of NYT articles per year had no impact on risk perceptions. Finally, for the control variables, compared to self-identified Democrats, independents viewed nuclear energy as more risky, and Republicans viewed it as less risky. Regarding demographics, older white males with a college education viewed nuclear energy as less of a risk than other demographic groups.

The results for climate change were also consistent with those of previous studies. On average, increasing hierarchy, egalitarianism, and environmental orientation were associated with increasing perceptions of risks, whereas increasing individualism and conservatism were associated with decreasing risk perceptions. Additionally, an increasing number of NYT articles per year was also associated with increased risk perceptions of climate change. As shown in Table 1, every 1 percent increase in NYT articles is associated with a 0.002 increase in the 0 to 10 risk perception scale.⁴ Partisanship was also a significant predictor, with both independents and Republicans viewing climate change as less risky than Democrats. Finally, older respondents viewed climate change as less risky

⁴ To interpret the logged coefficient, I divided it by 100.

Table 1 OLS analysis of nuclear energy and climate change risk perceptions

	<i>Nuclear Energy</i>	<i>Climate Change</i>
Hierarchy	−0.045*** (0.004)	0.026*** (0.005)
Egalitarianism	0.003 (0.004)	0.071*** (0.005)
Individualism	−0.037*** (0.004)	−0.031*** (0.005)
Fatalism	−0.024*** (0.004)	−0.004 (0.005)
Environmental orientation	0.079*** (0.005)	0.675*** (0.007)
Ideology (more conservative)	−0.045*** (0.007)	−0.261*** (0.010)
Independent (vs Democrat)	0.061* (0.026)	−0.302*** (0.033)
Republican (vs Democrat)	−0.094** (0.031)	−0.823*** (0.039)
Age	−0.001* (0.001)	−0.005*** (0.001)
Gender (male = 1)	−0.456*** (0.021)	−0.034 (0.027)
White	−0.043+ (0.026)	−0.012 (0.033)
College educated	−0.299*** (0.021)	0.152*** (0.027)
Log of NYT articles	−0.009 (0.021)	0.238*** (0.030)
N	23,200	22,149
R2	0.07	0.48
+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001		

than younger respondents, and those with a college degree viewed it as more risky than those without a college degree.

In the next section, I examine the change over time, from 2013 to 2023, of risk perceptions by deep core beliefs.

Results by Deep Core Beliefs

As noted, I created dummy variables for the various deep core beliefs, and in the following analysis, I used the dummy variables to subset the data to

illustrate learning between the different types of deep core beliefs across the two issues. Figure 2 shows the average risk perceptions of nuclear energy and climate change by deep core beliefs and year. Additionally, Fig. 2 illustrates the locally estimated scatterplot smoothing (loess) line, as well as the 95% confidence intervals, for risk perceptions and year.

Regarding nuclear energy, overall risk perceptions show small decreases across many types of deep core beliefs from 2013 to 2023. Each cultural worldview showed a pattern of decreasing risk perception, and there was overlap between the cultural worldviews. In 2013, egalitarians had a higher perception of risk than hierarchs (at $p < 0.10$) and individualists (at $p < 0.05$); however, by 2023, there were no significant differences between cultural worldviews. For environmental orientation, those high in environmental orientation showed a steady decrease in risk perceptions, whereas those low in environmental orientation did not see much difference. However, there was more variance, likely because of a smaller sample size. The differences between those high and low in environmental orientation were statistically significant, at $p < 0.001$, in both 2013 and 2023. Finally, conservatives and liberals seemed to remain generally consistent, and in both 2013 and 2023, the differences were significant at $p < 0.001$.

Looking to climate change, risk perceptions seemed largely stable for most deep core beliefs and the differences between the various types of

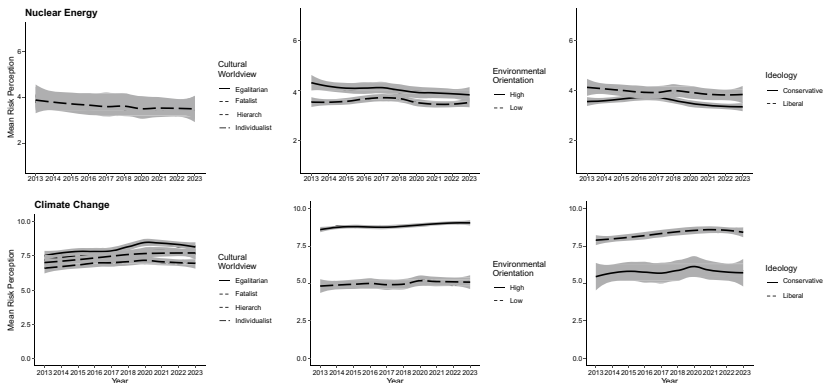


Fig. 2 Mean nuclear energy and climate change risk perceptions by deep core beliefs from 2013 to 2023

beliefs were large. With cultural worldviews, in 2013, egalitarians had a higher perception of risk than individualists (at $p < 0.001$), fatalists (at $p < 0.01$), and hierarchs (at $p < 0.05$). Additionally, in 2013, hierarchs and fatalists had a higher perception of risk than individualists at $p < 0.01$ and $p < 0.05$, respectively. In 2023, risk perceptions of climate change had further polarized, particularly between egalitarians and individualists. Specifically, egalitarians perceived more risk, and individualists perceived less risk than all of the other cultural worldviews at $p < 0.001$. Yet, there were no significant differences between hierarchs and fatalists in 2023.

For environmental orientation and climate change risk, perceptions were highly polarized between those with high and low environmental orientation. Over time, the risk perceptions of high environmental orientation seemed relatively consistent; however, those low in environmental orientation seemed to see increases in their risk perceptions. Regarding political ideology, both liberals and conservatives seemed consistent in their risk perceptions, and their views were highly polarized.

Finally, I examine belief change across each type of deep core belief between 2013 and 2023. Specifically, I compare the mean and variance of nuclear energy and climate change risk perception from the baseline of 2013 to 2023 to determine the learning outcome of the aggregate in each group. In addition, I show the percent change in the mean risk perceptions so changes in beliefs can be compared between nuclear energy and climate change. The results are shown in Table 2.

The results for the full sample, shown in Fig. 1, illustrated that risk perceptions changed and variance increased for both issues. As noted, the increase in variance could reflect a uniform increase in uncertainty, increased polarization, or an increase in variance in some groups but not others. Looking first at nuclear energy, Table 2a shows that, apart from those low in environmental orientation, risk perceptions decreased significantly across all deep core beliefs. In addition, across all beliefs variance increased between 2013 and 2023. These results indicate that learning as belief change occurred, but not learning as belief reinforcement. Rather, views, on average, became less uniform and predictable across deep core belief groups. An increase in variance, understood as an increase in uncertainty, was not a predicted learning outcome.

For climate change, as shown in Table 2b, climate change risk perceptions increased significantly across all deep core beliefs. Additionally, changes in variance were significant for individualists, high and low

Table 2 Differences in nuclear energy and climate change risk perceptions mean and variance from 2013 to 2023

<i>(a) Nuclear energy</i>			
Beliefs	Mean (Variance)	Percent change	Learning outcome
Hierarch	-0.4*** (0.86***)	-11.11 (28.66)	Belief change & Uncertainty
Egalitarian	-0.49*** (0.82***)	-13.03 (25.43)	Belief change & Uncertainty
Individualist	-0.33*** (0.82***)	-9.04 (27.22)	Belief change & Uncertainty
Fatalist	-0.43*** (1.06***)	-11.64 (37.14)	Belief change & Uncertainty
High environmental orientation	-0.48*** (0.81***)	-11.81 (24.08)	Belief change & Uncertainty
Low environmental orientation	-0.05 (0.24)	-1.47 (9.19)	No learning
Liberal	-0.238** (0.67**)	-5.97 (23.2)	Belief change & Uncertainty
Conservative	-0.241** (0.53**)	-6.97 (20.13)	Belief change & Uncertainty
<i>(b) Climate change</i>			
Beliefs	Mean (Variance)	Percent change	Learning outcome
Hierarch	0.52*** (1.03)	7.11 (13.98)	Belief change
Egalitarian	0.77*** (-0.46)	9.86 (-7.28)	Belief change
Individualist	0.38** (1.83**)	5.53 (20.84)	Belief change & Uncertainty
Fatalist	0.7*** (0.84)	9.54 (12.03)	Belief change
High environmental orientation	0.49*** (-0.58**)	12.02 (-17.14)	Belief change & Reinforcement
Low environmental orientation	0.35*** (1.73***)	10 (66.95)	Belief Change & Uncertainty
Liberal	0.56*** (0.21)	6.87 (5.12)	Belief change
Conservative	0.43** (1.95**)	7.64 (21.47)	Belief change & Uncertainty

environmental orientation, and conservatives. For those high in environmental orientation, variance was significantly reduced, resulting in belief reinforcement; however, for the other beliefs, variance increased. These results suggest that the overall increase in variance regarding climate change shown in the full sample is a result of increases in variance for some groups, particularly those groups least likely to be concerned

about climate change. Additionally, these results are similar to previous work that found climate change views among conservatives and Republicans were less stable over time than those of liberals and Democrats (Jenkins-Smith et al., 2020).

Finally, I examine the percent change in the mean and variance in risk perceptions.⁵ This allows for comparisons in the magnitude of changes between nuclear energy and climate change. In general, percentage changes for both means and variances were smaller for climate change than for nuclear energy across deep core beliefs. These results indicate that policy core beliefs were less stable for nuclear energy than for climate change, perhaps reflecting that climate change is more polarized, which works to stabilize beliefs. Additionally, beliefs may be less stable in environments where information is less available.

DISCUSSION AND CONCLUSION

Policy-oriented learning is a critical component of the ACF. However, given the difficulty in conceptualizing and measuring learning, it is one of the ACF's least studied aspects. Recent work has argued that beliefs can be conceptualized as probability distributions, and changes in those distributions can be considered learning. Understanding learning in this way captures the seemingly contradictory notion of learning as both belief change and belief reinforcement. Belief change is measured as a change in the central tendency, and belief reinforcement is measured as a reduction in variance.

In this chapter, I used a decade's worth of public opinion data to build on research examining beliefs as probability distributions to include the role of information environments in policy-oriented learning. Specifically, I explored learning regarding policy core beliefs (i.e., risk perceptions) associated with nuclear energy and climate change. These issues are polarized across deep core beliefs, yet they have different information environments with information about climate change more available than information about nuclear energy.

First, I compared the kernel density estimates for nuclear energy and climate change risk perceptions in 2013 to 2023. As shown in Fig. 1 found a significant decrease in risk perception for nuclear energy, an

⁵ This was calculated simply as the differences in means (variances) between 2023 and 2013 divided by the mean (variance) in 2013 and multiplied by 100.

increase in risk perception for climate change, and a significant increase in variance for both. This indicates that learning as a belief change occurred in both issues, but belief reinforcement did not occur. Rather, across the whole sample, variance increased for both issues, which reflects increasing uncertainty. The role of uncertainty in policy-oriented learning is an understudied and important avenue for future research.

Next, I used OLS regression to examine associations between risk perceptions, deep core beliefs, and the information environment. As shown in Table 1 and consistent with prior research, nuclear energy and climate change risk perceptions are polarized across belief systems. But, as Fig. 2 indicates, nuclear energy is less polarized across deep core beliefs than climate change. With regard to the information environment, I found that the number of NYT articles was a significant predictor for risk perceptions regarding climate change, but not nuclear energy.

Third, I explored learning across deep core beliefs and found that learning as belief change occurred across types of beliefs, as did increased variance or uncertainty. The changes in beliefs and uncertainty reflect beliefs that are unstable, which may be a result of the information environment where information is less available. In addition, it is likely that the information environment of nuclear energy changed as a result of the accident in Fukushima, Japan, in 2011, which was a focusing event and exogenous shock to the nuclear energy subsystem. There was widespread media coverage of the accident, which heightened risk perceptions and decreased support for nuclear energy (Gupta et al., 2019; Kim et al., 2013). Therefore, the learning that resulted in decreased risk perceptions is likely due, in part, to the shift in the information environment, including both availability and tone, as media coverage of the accident receded.

For climate change, uncertainty only increased for those less likely to initially see climate change as a risk, including individualists, those low in environmental orientation, and conservatives. The magnitude of shifts in beliefs and variance, measured by the percent changes in means and variance, seemed smaller for nuclear energy than climate change. This is likely because climate change is more polarized than nuclear energy, and as a result, policy core beliefs become more entrenched. Yet, even with such a polarized issue, strong information signals that exist in environments with more information available seemed to shift beliefs.

These results highlight the importance of information environments in policy-oriented learning, yet there are a few limitations. First, I used

policy opinion data as a proxy for elite beliefs in advocacy coalitions. As noted, previous work has found similar structures in beliefs across elite and public samples. Therefore it is likely that learning regarding belief systems would also be similar. However, as noted by Ripberger et al. (2014), elites and the mass public differ on the degree to which beliefs with the belief system constrain other beliefs. Constraint in belief systems refers to the strength of associations between beliefs. Deep core beliefs would have a stronger influence on policy core beliefs in belief systems that are highly constrained compared to belief systems with less constraint. While the underlying dynamics are likely similar, the increased belief system constraint of elites means that learning is probably less likely among elites than among the public. Second, I measured learning using pooled, cross-section survey data. I could only capture learning in the aggregate and among subgroups that share certain deep core beliefs, not among individuals. While inferences can be made about beliefs and learning in the aggregate, caution is warranted for inferring too much about policy actors in subsystems. However, these results do show this as a promising avenue and future research should explore learning and information environments among elite policy actors. Finally, I have a limited measure of information environments. Future work should examine the other major part of the information, the type of information that is available. Apart from availability, information type will likely play a role in policy-oriented learning.

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How Did We Miss This? Democracy and Policy Beliefs in the Advocacy Coalition Framework

Jill Yordy

Each of us lives in a space governed and organized by policies, institutions, and processes. Culture, the shared and negotiated systems of meaning we learn from our social context, organizes and structures our beliefs, morals, and perceptions of the world around us (Lassiter, 2002). Public policy is similarly shaped by the beliefs of people striving to influence the policy process. Public policy is understood as an imperfect translation of individual and collective beliefs (Sabatier & Jenkins-Smith, 1993, p. 28). The policy process shapes what is and is not permissible in society, how policy decisions are made, how we interact with government institutions, and where these interactions take place. Beliefs are central to the policy process and how policy shapes equities and disparities in society.

Different types of political systems are associated with sets of values that interact with the beliefs of individuals living in those societies, including those who influence the policy process. Rules and norms associated with different political systems also broadly shape who is permitted to influence the policy process (Weible & Ingold 2018) and what rights are conferred to people (Dahl, 1998; Habermas, 2016). Democratic political systems impute conceptual ideals or principles intended to protect people in a

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society from exploitation by the powerful through rights such as individual freedom (Schumpeter, 2008), collective human dignity (Lasswell, 1948), or self-determination (Young 2002). Individual's beliefs about the values or goals of democracy, however, can vary widely both substantively and in determining whether specific policies or practices are consistent with democracy. This insight from democratic theory literature indicates a source of potential variation in policy actor beliefs.

Much of the policy process literature, however, is detached from democratic theory literature. One critique of the ACF is the relative neglect of how different political systems shape expectations, assumptions, and normative concerns related to the policy process (Ingram et al., 2016). The ACF assumes dynamics related to the political system of a society are relatively stable parameters, and emphasizes the importance of policy actors' policy-oriented beliefs, as defined in relation to a specific policy subsystem, in shaping policy change. However, insights from democratic theory literature suggest nuances in individual beliefs about democracy and the degree of shared beliefs about democracy between individuals may play a role both in political system stability over time and in how actors engage with the political system to influence policy change. This study asks to what extent variation exists across policy actor beliefs about democracy, referred to as democracy-oriented beliefs.

Potential for variation in democracy-oriented beliefs of actors from the same political system undercuts ACF assumptions that political system dynamics are beyond the scope of theoretical expectations about policy change. Thus, this study considers a second critique related to policy actor beliefs. The ACF posits policy actor beliefs drive multiple policy change factors. However, mixed empirical findings in tests of belief-related hypotheses have led to questions about whether policy actor belief systems remain conceptually and theoretically under-specified (Jenkins-Smith et al., 2018; Weible et al., 2020). A grounded theory approach is used to analyze in-depth interview data from 18 policy actors across two municipal housing policy subsystems serving populations with opposite partisan leanings to explore the potential relationship between actors' democracy-oriented beliefs and their policy-oriented beliefs.

This chapter presents three primary findings. First, variation does exist in democracy-oriented beliefs expressed by individual policy actors. Individual belief variation cuts across themes of the rights and responsibilities actors believe people have in democracies, what processes they associate with democracy, what they believe the realities of democracy

to be, and the normative purposes of democracy. Second, assessment of actor groups' democracy-oriented beliefs suggests that variation in democracy-oriented beliefs exists across groups of actors active in different subsystems. Finally, this study finds most policy actors integrate aspects of their democracy-oriented beliefs into policy-oriented beliefs from multiple tiers of the ACF's hierarchical conceptualization of policy belief systems. This finding indicates a need for further theoretical development of how democracy-oriented belief variation affects policy belief-dependent expectations around coalition formation, learning, and policy change.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

This study takes up two critiques of the ACF related to how policy actor beliefs are conceptualized in service of theoretical expectations. The first argues the ACF gives insufficient theoretical attention to how democracy shapes the policy process. The second questions whether policy actor beliefs in the ACF are under-theorized or mis-specified given mixed support for belief-dependent ACF hypotheses in empirical applications. I contend these critiques are interrelated given insights from the democratic theory literature. In addressing these critiques, this chapter asks two research questions:

- (1) To what extent do democracy-oriented beliefs held by policy actors vary?
- (2) How do policy actor's democracy-oriented beliefs relate to their policy-oriented beliefs?

Why Might Democracy-Oriented Belief Variation Matter for the ACF?

Although the Advocacy Coalition Framework is intended to be applicable in a variety of contexts, applications of the ACF rarely consider how fairly stable factors external to subsystems such as the political system of the study context may disparately influence actor's policy-oriented beliefs. These parameters, including a political system's basic legal structure and associated cultural values or norms, are often merely reported as fact in empirical studies if mentioned at all. For the purposes of this chapter, I focus specifically on democracy-oriented beliefs. These are beliefs held

by policy actors about democracy, including the values, norms, perceptions, or practices they associate with democracy, either as an ideal or real political system.

Democracy is a contested concept in both the academic literature and in practice. Democratic societies throughout the world implement democracy in different ways. Empirical study of democratic systems in modern times can be broadly divided into two theoretical camps, with many more sub-variants of each. One camp postulates an aggregative model of democracy, which encourages focusing on the institutional or procedural mechanisms (e.g. frequent and fair elections) that are thought to make democracy work, often to the neglect of democracy's normative aspects. Alternatively, studies aligned with a deliberative or purposive model of democracy place greater importance on democracy's normative values and somewhat less importance on specific mechanisms or institutions of democracy, so long as certain normative values such as consensus or inclusion are present. Debate exists in both camps about what the necessary and sufficient criteria of democracy are (Gerring 2011). Other theorists, such as Saward (2003), have argued that that making claims about which specific list of values are essential for democracy will not advance democratic theory.

Despite this variation in how democracy looks and functions, some degree of shared beliefs about democracy among individuals throughout a society is theorized as necessary for democracy to be sustained as the political system (Lasswell, 1948; Prothro & Grigg, 1960). However, empirical study has revealed that democracy means different things to different people both within the same democratic society and across different democratic societies (Davis et al., 2022; Prothro & Grigg, 1960; Schaffer, 2000). In a federalist democratic society such as the United States, which have multiple levels of government with some discretion over shaping their level's rules and institutions of democracy, there is further potential for variation in democracy-oriented beliefs across subsystems within the country-level political system. If variation exists in actor's democracy-oriented beliefs across individuals or subsystem contexts, then the ACF's assumption about political systems as relatively stable parameters warrants closer scrutiny.

While both theoretical camps of democratic theory literature have addressed beliefs held by individuals and groups within democracies empirically, few have systematically explored the beliefs and motivations held by policy actors (Koskimaa & Rapeli, 2020). Given that neither the

democratic theory literature nor the ACF have rigorously studied policy actors' democracy-oriented beliefs the topic is ripe for consideration.

Unpacking Uncertainty in the ACF's Conceptualization of Policy-Oriented Beliefs

The ACF understands actor's policy-oriented beliefs, conceptualized as a hierarchal three-tiered belief system that identified by how policy-oriented beliefs relate to the subsystem(s) in which a policy actor works to influence policy change (Sabatier & Jenkins-Smith, 1993, 1999; Weible & Sabatier, 2007; Henry et al., 2022). For a basic definition of each tier of policy-oriented belief I use those provided in *Methods of the Policy Process* (Henry et al., 2022). The most intractable and broad tier of beliefs in the system structure conceptualized by the ACF are called *deep core beliefs*. Deep core beliefs are assumed to underpin policy core beliefs (Ripberger et al., 2014); however the mechanisms of this relationship are empirically and theoretically underexplored. *Policy core beliefs* relate broadly to the policy subsystem being empirically studied. The relative nature of policy core beliefs leaves theoretical uncertainty around messy empirical contexts such as policy actors who engage regularly in more than one policy subsystem, whether nested or overlapping. The third tier of ACF's conceptualization of policy actor belief systems is *secondary policy beliefs* which are conceptualized as "narrower than the subsystem" (Zafonte & Sabatier, 1998:477). Secondary policy beliefs can thus be thought of as the instrumental means for achieving, at least in part, policy core goals. Differences in secondary policy beliefs are most often less controversial and less normative than differences in policy core or deep core beliefs.

Relationships between belief tiers and policy-oriented beliefs influence on actor behavior are specified in formal hypotheses based on the ACF's conceptualization of policy-oriented beliefs; however, several hypotheses have found only limited support in empirical studies (Jenkins-Smith et al., 2018). Pursuant to inconsistent findings in empirical studies testing hypotheses dependent on the ACF's conceptualization of policy-oriented beliefs, critiques of the ACF's belief system conceptualization have emerged. Scholars have argued the three-tier structure is too rigid (Olsson, 2009) and that the generalization of a hierarchical subsystem-based belief system may not be appropriate for all policy actors in a subsystem (Weible et al., 2020). Subsystem-specific policy beliefs can be fluid and unspecified in nascent subsystems (Ingold et al., 2017) and

the clarity of an actor's belief system levels may vary depending on the frequency of their involvement in one or more subsystems (Weible et al., 2020). Methodological considerations have also been raised along with recommendations for more standardized approaches to policy-oriented belief identification (e.g. the use of Cultural Theory to identify deep core beliefs by Ripberger et al., 2014; Jenkins-Smith et al., 2014; Sotirov & Winkel, 2016). These examples illustrate the unresolved questions surrounding the ACF's theoretical cornerstone of policy-oriented beliefs.

Implications of a Potential Relationship Between Democracy- and Policy-Oriented Beliefs

The ACF holds that coalition formation and policy debates are fundamentally related to variation in actor beliefs. Coalition formation and stability over time is commonly attributed to the existence of shared policy core beliefs, or belief consistency, between actors (Matti & Sandström, 2011; Sabatier, 1998; Sabatier & Jenkins-Smith, 1999) and sometimes secondary policy beliefs (Henry 2011; Ingold 2011). Differences in beliefs between actors, which I conceptualize as belief variation, motivate conflict between coalitions over desired policies within subsystems according to the ACF (Rietig, 2018; Weible et al., 2020). If policy actors exhibit (1) variation in their democracy-oriented beliefs and (2) these democracy-oriented beliefs are interrelated with their policy-oriented beliefs, then democratic political systems may be a dynamic factor rather than a stable factor in policy change over time.

Further, the policy-oriented belief tier at which variation or consistency exists is also theoretically important in the ACF. Policy core beliefs are thought to be resistant to change, which contributes to the general stability of coalitions (Zafonte & Sabatier, 2004); however, while policy core beliefs are often shared among coalition members, deep core beliefs are not necessarily shared (Moyson, 2017). The reasoning for policy core beliefs as key to coalition formation is goldilocks-esque logic. Policy core beliefs provide the glue for coalition formation because deep core beliefs are too general upon which to form coalition ties while secondary policy beliefs are too specific (Kukkonen et al., 2017). Thus, while coalition members may share deep core beliefs or secondary beliefs, shared beliefs at these tiers are generally not seen as strong enough to motivate coordination in pursuit of policy change over time. It follows that the tier level at which democracy-oriented beliefs are related to policy-oriented

beliefs may impact the ACF's theoretical expectations related to beliefs. Answering this study's second research question requires an analysis that maps democracy-oriented beliefs onto policy-oriented beliefs with regard for the ACF's hierarchical belief system conceptualization.

Based on Henry et al.'s (2022, 108–109) definition of deep core beliefs, “fundamental normative orientations or worldviews,” a logical expectation guided by the normative democratic theory camp is that democracy-oriented beliefs would fit neatly into this tier of policy-oriented beliefs. However, this expectation warrants empirical investigation given Prothro and Grigg's (1960) research on consistency of democracy-oriented beliefs at various levels of abstraction. They found widespread consensus in participant agreement with abstract statements about democracy. Shared consensus disappeared when participants were asked about agreement with less abstract more concrete policy positions consistent with the abstract statements about democracy. Despite the disappearance of consensus, participants still responded positively to some of the more concrete policy positions that incorporated elements of the abstract statements about democracy, albeit in a pattern that reflects higher belief variation in how policy actors relate their democracy-oriented beliefs to policy-oriented beliefs at less abstract levels.

The Prothro and Grigg study reflects conceptual challenges similar to those raised in critique of the ACF's belief system conceptualization. Clarity on the integration of democracy-oriented beliefs and policy-oriented beliefs may produce new insights for the ACF on the degree to which and under what conditions beliefs at the deep core, policy core, and secondary policy tiers vary or are shared. This study takes the first step in exploring this potential for theoretical development by empirically examining whether and how policy actor democracy-oriented beliefs are related to policy-oriented beliefs.

STUDY CONTEXT

Defining Study Subsystems

The housing policy subsystems of Denver and Colorado Springs, Colorado's most populous cities which are both located along the I-25 corridor on the eastern side of the Rocky Mountains, provide the study context for this chapter. Fully identifying subsystems is an empirical question based on geographic scope, the topical concern of policy

problems, and the policy actors involved (Weible & Sabatier, 2007). This chapter uses city boundaries to help territorially define the focal subsystems of Denver and Colorado Springs and focuses on the topical policy area of housing. Colorado state law provides statutory cities and towns with a broad range of authority to address the needs of their populations through self-government and allows municipalities to adopt a home rule charter granting themselves additional authority (Creighton et al., 2018). Many state-level housing policies enacted by the Colorado State Assembly are implemented by divisions under the Department of Local Affairs and aim to directly influence or support municipal housing policy subsystems.

Given the overlapping and nested nature of subsystems, and the intricate relationships between levels of government in federalist systems, the exact geographic scope of a particular subsystem is fully defined as part of the research process (Angst, 2020). Figure 1 presents a depiction of the nested and overlapping nature of these two local-level housing policy subsystems as identified during the research process. In this study context, state-level policy actors primarily deal with state-level housing policy decisions, such as the implementation of state legislation, and often work in various capacities with actors in each local-level subsystem to address local-level housing policy problems. Denver policy actors work on housing policy specifically for Denver through the policymaking venues tied to the City and County of Denver, such as the city council or the Department of Housing Stability (HOST). Similarly, Colorado Springs policy actors work on housing policy specifically for Colorado Springs through the policymaking venues tied to the city, such as the city council or Community Development Division. Multi-subsystem actors are active in more than one local-level subsystem and have a role of representing local actors or policy concerns in the state-level housing subsystem.

Housing Policy

In the United States, housing policy can span housing affordability, residential zoning, building codes, land use planning, and related matters. Housing policy is addressed at every level of government in the United States from federal to local. As Schwartz points out, “housing policy is seldom just about housing. Nearly every housing program initiated since the nineteenth century has been motivated by concerns that go beyond the provision of decent and affordable housing” (2021:5). Housing policy

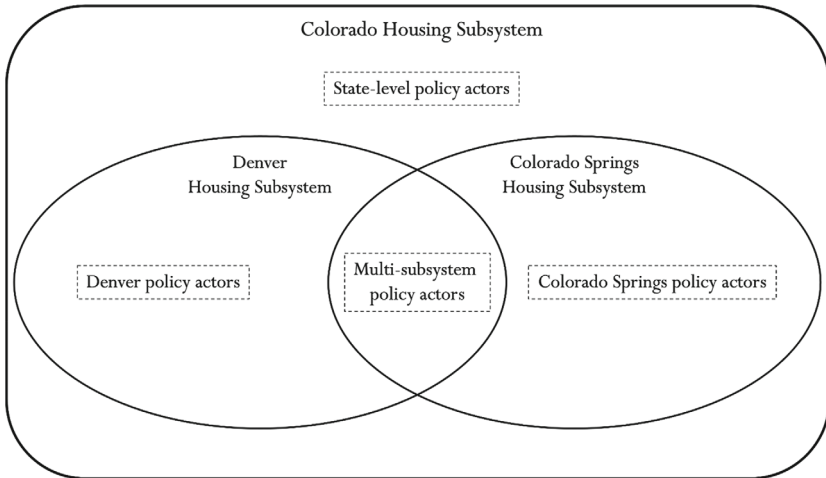


Fig. 1 Nested and overlapping housing policy subsystems

is often closely tied to economic, racial, and other disparities in a community (Goetz, 2012, 2021; Zenou & Boccard, 2000). A forthcoming study by Monarrez (Monarrez forthcoming:1) finds that residential segregation, a legacy of redlining and other inequitable policies, “explains more than 100 percent of school segregation in the U.S.” Different levels of government can influence housing policy at other levels, thereby shaping the role of housing policy in creating or alleviating disparities. For instance, Michener (2022) explores the phenomena of state pre-emption used to block municipal efforts to use housing policy to improve equity in their communities and correct inequitable legacies. Given the history of housing policy in shaping societal disparities and the adverse implications of disparities in society for democratic ideals, housing policy is a logical topical area to study the democracy-related beliefs in relation to the ACF.

Housing policy has been addressed previously in both the ACF and democratic theory literatures. A number of studies focused on democracy have dealt with housing policy-related areas such as redevelopment (Dahl 1961), affordable housing siting (Scally & Tighe, 2015), race and housing (Smith, 2012), and city planning (Fainstein & Fainstein, 2013). Many of these studies are centered on city-level housing policy and this chapter adds to the robust extant literature with a novel focus on policy-related

belief systems. The few ACF applications in this policy area focus on a range of countries and federal-level housing policy (Battams & Baum, 2010; Beard, 2013; Dalzell, 2006; Lovell, 2007; Nowlin et al., 2022). This study focuses instead on municipal housing policy subsystems.

Cities

Cities are perhaps the optimal context of government in which to explore sub-national democracy and the policy process. Tocqueville (1969) referred to cities as emblematic of American democracy. Many notable American political theorists have focused their research on democracy in cities through case studies (e.g. Dahl, 1961; Fung, 2009; Young, 2011). Historically, the earliest democracies were situated in city-states such as Athens (Dahl, 1998). Cities are arguably the optimal size for democratic governance in modern times because they balance significant constraints on democracy, such as population size and geographic scope, with the ability for people to engage with advanced economies (Dahl, 1967). City is defined as an incorporated place following the US Census Bureau's 2015 report on the percent of the US population living in cities. According to this report, as of 2013 nearly 63% of people in the United States lived in cities.

Dahl has made the argument that cities with populations between 50,000 and 200,000 residents are optimally sized for democracy (1967). Population size is important for democratic theory because the larger the population, the less feasible direct democracy mechanisms are which necessitates greater reliance on representation mechanisms. This chapter examines beliefs in the housing policy subsystems of Colorado's two largest cities in part because they both have populations above Dahl's argued ideal population size for democracy, meaning policy actors are more likely to have complex and diverse understandings of democracy due to constraints associated with larger population sizes, and are likely to have well-developed policy-oriented belief systems related to their focal policy area(s) due to the need for specialization in larger cities (Sabatier & Jenkins-Smith 1993).

Local governments, including cities, pose some difficulty for academic researchers using policy process theories comparatively in the US federal system. They lack any constitutionally guaranteed authority from the federal government, and are instead dependent on state government decisions about limits on local government authority (Blair & Starke, 2017).

Given the position of cities in federalist systems, I include state-level policy actors that interact with city-level subsystems in my pool of interview respondents described below.

METHODS

Data Collection

This study uses in-depth semi-structured interviews (Weiss, 1995), as the primary source of data. Many ACF studies that solicit self-reports from policy actors to measure beliefs typically ask actors whether they agree or disagree with prepared belief statements, this approach may result in path dependency (Henry et al., 2022). To alleviate this risk, I use in-depth semi-structured interviews with open-ended questions targeting democracy-oriented beliefs, policy-oriented beliefs (broadly), deep core beliefs, policy core beliefs, and secondary beliefs. Further a semi-structured interview protocol designed to elicit policy actor's reflection on their own beliefs minimizes the challenge of inferring actor beliefs from unsolicited belief statement data sources (Henry et al., 2022). Interviews averaged 54 minutes with participants speaking approximately 80% of that time. Interviews were conducted via Zoom, audio recorded, and transcribed in full.

A purposive sampling strategy was used to recruit a most diverse participant sample. This involved identifying policy actors active in both municipal subsystems, including relevant state-level actors, following initial information gathering (Nickels 2019) and seeking participants beyond those most visible in the subsystems to maximize sample diversity. At the end of interviews, participants were asked to recommend others I should speak to, with an emphasis on hearing from as many diverse perspectives on both democracy and housing policy as possible. Selective snowball sampling expanded recruitment consistent with a purposive strategy. Snowball sampling on its own can be subject to systemic inequalities already present in policy subsystems. In a study of municipal takeovers, Nickels (2019:19) found white leaders frequently recommended other white individuals.

Participants for this study include demographic diversity across the characteristics of age, race and ethnicity, political orientation, educational attainment, childhood socio-economic status, and professional affiliation related to housing. Participant ages range from 29 years old to 74 years

old. Actors engaged in only Denver ($n = 5$) or Colorado Springs ($n = 5$) at the local level reflect nearly the full range of ages while the state-level actor ($n = 6$) and multi-subsystem ($n = 3$) participants have ages from mid-30s to mid-50s. All four of these participant groups include multiple levels of educational attainment, from associates degree through terminal degrees such as juris doctorate. The race and ethnicity identities disclosed by participants include Black, Latina/Latino, Mexican, white/Caucasian, Indigenous, Hispanic, and non-Hispanic. Participants described growing up in a range of socio-economic conditions from intermittently homeless to wealthy, with a majority of participants describing lower to upper middle-class childhood socio-economic statuses. Finally, participants' professional affiliations include state and local government agencies, elected office, housing-related advocacy and direct service non-profits, housing development organizations, government support and research organizations, and financing organizations.

Grounded Theory Approach

I employ a grounded theory approach for analysis (following Glaser & Strauss, 1967; Charmaz 2014), with attention to theory building through abductive reasoning described by Timmermans and Tavory (2022). A grounded theory approach is useful for addressing questions that cannot be answered quantitatively where the goal of research is to move beyond the descriptive analyses that are often associated with qualitative research.

Analysis and data collection proceed concurrently until a point of theoretical saturation. Theoretical sampling guides this process and incorporates iterative stages of recruitment and data collection tied to the ongoing analysis (Charmaz 2014). This involved reflection on working analysis insights to inform additional data collection needs to find the bounds of emergent categories from constant comparison techniques (Holton, 2010). Analysis shaped the modified snowball sampling recruitment to add perspectives indicated in interview data but not yet represented and to query whether working findings were incomplete due to an unsampled factor. This occurred, for instance, when I observed a pattern emerging around participants' self-identified political orientation after the first five interviews. These initial participants all self-identified as "progressive," when asked to describe their political orientation. This was unexpected given wide diversity among these actors on other demographic and professional dimensions. After theoretical sampling to include

participants affiliated with sectors that don't often politically identify as progressive, the pattern shifted to participants self-identifying as unaffiliated with a political party. In total, 14 of 18 participants did not affiliate with a political party by name when asked about their political orientation, using terms including progressive, independent, unaffiliated, centrist, and no party.

I used iterative phases of data analysis, including coding, memo writing, theoretical sampling, and saturation, to construct theoretically relevant themes (Creswell & Baez, 2020). For example, one of the unexpected concepts that emerged was that of a multi-subsystem actor to describe policy actors active in both the Denver and Colorado Springs housing policy subsystems, as well as sometimes the state-level subsystem, but with different subsystem prioritizations than state-level actors.

FINDINGS

Variation in Democracy-Oriented Beliefs Across Actor in a Political System

All participants expressed democracy-oriented beliefs in response to being asked what the term democracy meant to them. Democracy-specific questions were asked toward the end of interviews and several, but slightly less than half of participants also spontaneously mentioned the term democracy in response to policy-oriented belief questions.

Variation was present across individual policy actor's democracy-oriented beliefs based on differential meanings attributed to commonly referenced terms. Concepts such as voice and power, in reference to beliefs about people's rights in a democracy have different meanings across actors. One meaning equates voice as the right to vote. "Democracy to me is rule for, and by the people. Something straight out of the Constitution, that people can register to vote. That they do have a voice" (Bill, Colorado Springs). A second meaning is *voice* as the ability and opportunity to share opinions to influence community. "For me, democracy really is about allowing for those individual values to *speak* at a community level" (Ryan, Colorado Springs). In a third meaning of *voice*, the associated right to influence is clarified with a belief that the right to voice can be realized via multiple procedural means. "[Democracy means] that everyone has a voice. That can be in a lot of different ways. But everyone has a voice, and they have access to using their voice" (Henry,

Denver). Beyond observed variation across actor beliefs, common themes also exist across actors in their expressed democracy-oriented beliefs, such as the theme of beliefs asserting democracy is associated with rights and responsibilities of people in a democracy despite conceptual meaning differences in those beliefs.

Variation in Democracy-Oriented Beliefs Across Subsystem Contexts in a Political System

Figure 2 shows the most prevalent democracy-oriented beliefs identified through coding and variation in the prevalence of these coded beliefs in each actor group. Democracy-oriented beliefs coded in the data shown in Fig. 2 are assigned a letter for simplicity in discussing the findings and letters are assigned based on overall prevalence of the belief across all study participants. For instance, belief A is, “*all people deserve equal voice*,” and is associated with the concept of *voice* as a personal right as discussed above. Light-colored squares, such as the one indicating the association of CO Springs actors and belief D, “*democracy involves power sharing*,” reflect a low proportion of actors in the Colorado Springs actor group expressed belief D. White squares reflect zero actors from the associated actor group while black squares indicate all actors from the associated actor group. Variation in democracy-oriented beliefs across actor group subsystem contexts is shown in Fig. 2. Notably, while one instance of universal belief consensus for a particular democracy-oriented belief is evident in three actor groups (Denver—belief B, CO Springs—belief A, and State—belief C), when looking at study participants overall, universal consensus is not present for any single democracy-oriented belief. None of the identified democracy-oriented beliefs are shared by all participants despite all of them being involved in municipal housing policy subsystems within the broader US and Colorado political system contexts.

Macro-political systems, such as a democratic governance system, are included in what the ACF considers to be relatively stable parameters—things that should impact all policy actors similarly (Sabatier & Jenkins-Smith, 1999; Nohrstedt et al., 2023). In a functional democracy we assume most or all policy actors would have shared beliefs about what democracy is and means (Dahl 1998), this general expectation is aligned with the ACF’s assumption about relatively stable parameters. From an ACF perspective, actors should have a general consensus about how and why macro-level political system features function. These results

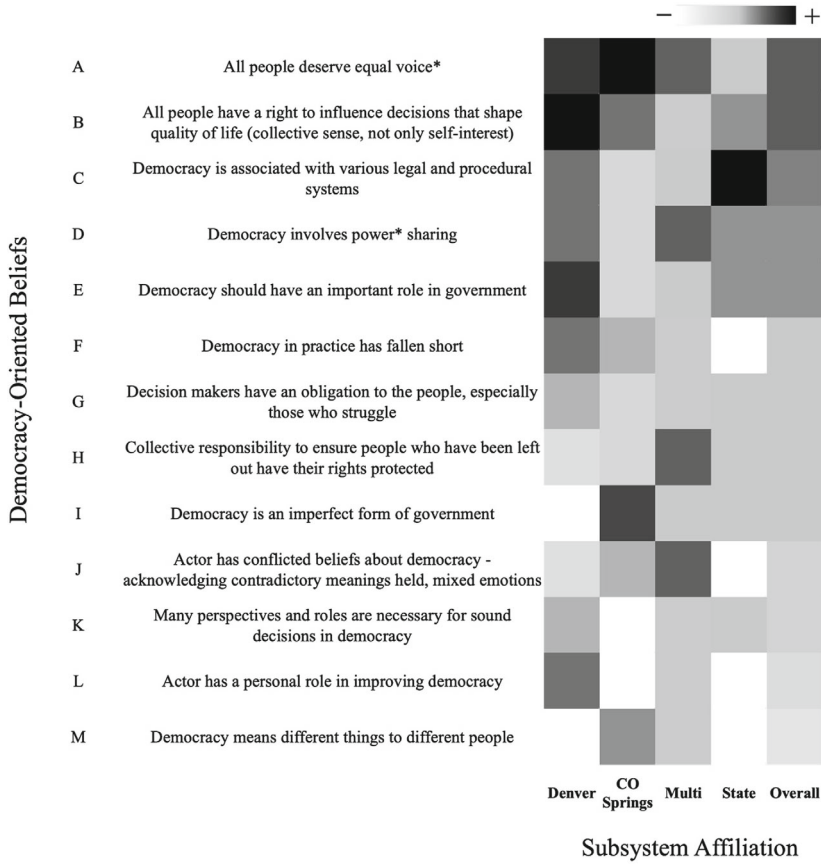


Fig. 2 Variation of democracy-oriented belief expression across context by proportions of actors

demonstrate that actors in the same country-level and state-level democratic context have a variety of beliefs about democracy, how and why it should(n't) or does(n't) function, with varying degrees of consensus (shared beliefs) within and across distinct policy subsystems. This finding is important for the ACF because it indicates the potential for relatively stable parameters to influence policy actors differently based on the

meaning actors give to these parameters through their individual belief systems.

How Do Democracy- and Policy-Oriented Beliefs Relate?

After coding policy-oriented beliefs and their associated tiers for each actor, I compared that actor's democracy-oriented beliefs to explore inter-relationships. A policy-oriented belief that interrelates with a democracy-oriented belief generally exhibits shared concepts, values, or meanings across both. Table 1 provides examples of inter-relationships identified through analysis of the data.

In some cases, but not all, a policy-oriented belief and a democracy-oriented belief expressed by the same actor contain reference to the same value or concept. Examples of these are demonstrated in Table 1 where the coded policy-oriented belief is provided above the quote from which it was coded and the common element with a democracy-oriented belief from the same actor is in bold. As with the examples from Marcia, inter-relationships between democracy- and policy-oriented beliefs are present at more than one ACF belief system tier. The theme of inter-relationships between democracy- and policy-oriented beliefs at multiple tiers is also evident in actor's own reflections on the relationship between their democracy- and policy-oriented beliefs such as in the examples from Ryan and Brittany. These findings are consistent across subsystem contexts, reinforcing that the varying meanings actors give to relatively stable parameters, such as a system of democracy, may contribute policy actors' preferences and actions in subsystems through how they integrate beliefs about relatively stable parameters with their other policy-oriented beliefs.

Such a finding means the ACF needs to theoretically account for variation in micro-level policy actor beliefs about relatively stable parameters in the framework's expectations related to how actors' belief systems influence policy change, coalition formation, and policy learning in subsystems. For example, are shared beliefs about democracy as important for coalition formation as shared policy core beliefs? The ACF expects that coalition formation is driven by shared beliefs at the policy core level. Incorporating the idea of variation in beliefs about democracy, future research could investigate whether coalition formation is more likely when actors have shared policy core beliefs and shared democracy-oriented

Table 1 Sample of inter-relationships identified between actors' democracy- and policy-oriented beliefs

ACF belief	Tier
	Examples from the data analysis (D) = a value or concept from the same actors' democracy-oriented beliefs is identifiable in their expression of a policy-oriented belief, indicated with bold quotation text Anyone in society is capable of developing policy solutions (D) I think [a good policy idea] can come from anywhere, right, but any of us can identify a problem and propose a solution. And I think that everybody should do that.—Marcia It's not possible to have a completely data-driven, value-neutral policymaking system (D) I think that folks' personal values will color and shade their outlook, maybe their analysis. So, I don't think it's possible to have a completely data driven agnostic policymaking system. And that's essentially why we have elections.—Frank Affordability is key problem cities face with housing policy (D) [Housing policy is] important because without housing policies that help us create that sort of equity, we would see, and I think we are seeing, things like teachers and waitstaff and nurses in our hospitals not being able to live in the communities that they serve and having to live farther and farther away. And at some point, people choose just not to work here either because of that.—Julia Housing policy should not be an all or nothing prospect "In many areas of government, we seem to respect the fact that you know, you have to chip away at things and you have to, you know, work, you know, one street at a time to get rid of the potholes and that at no time will all the streets in your city be safe with housing policy expectations are so out of whack.... it is a dangerous and debilitating way of approaching a policy topic, to put it in all or nothing terms. And to measure it only by whether it eliminates the entire problem. These are structural inequalities built into our system. And they are not realistic expectations for public policies within a local government toolbox."—Amanda
Deep core belief	
Policy core belief	

(continued)

Table 1 (continued)

Secondary belief	Big investments in middle- and higher-income housing won't solve affordability issues for lower income people <i>There's a lot of talk in housing policy about and making big investments in middle- and higher- income housing and hoping that that will trickle down to low-income people. Well, the data has never shown that to be effective. We know that trickle-down economics doesn't work, trickle-down housing doesn't work.</i>—Marcia Democracy reflected on in response to policy-oriented belief question Good policy results from collaborative processes/democracy. (One tier—deep core belief) <i>Public policy is the only way that we are able to, in a very broad sense, develop laws in a collaborative fashion... [The] best public policy is made from collaboration and cooperation, where you have to bring forth the ideas, whether you agree with them or not, and talk through a variety of, you know, issues and ideas and discussion points that sometimes may be uncomfortable for policymakers. However, without that, I don't think we have a democracy, quite frankly.</i>—Rhonda <u>Policy-oriented beliefs reflected on in response to democracy-oriented belief question</u> Reference to prior discussion of policy-oriented beliefs (all three belief system tiers) <i>Democracy is foundational to all the [policy-oriented beliefs] that we were talking about, I think a big part of democracy is transparency and elevating the role of the constituents to a higher level than the decision makers, it's a very challenging thing to do to be able to give that sort of control and input to the folks that are needing to make decisions. But again, this kind of speaks to how individual values can really grow up to supporting a community values piece.</i>—Ryan Reference to prior discussion of policy-oriented beliefs (all three belief system tiers) <i>[Democracy is] kind of what we've been talking about. I'm glad my answers have kind of aligned with that actually... ..on that note, since you're going democracy route, I do worry about the large the loudest voices, not necessarily representing people. And that's something as a policymaker we have to be careful of. One person's issue might not be 100 other people's issue and so you can't change the entire system and make it more difficult for everyone to solve one person's problem.</i>—Brittany
Actor reflections on democracy- and policy-oriented inter-relationships (one or more ACF belief system tiers)	

beliefs but weakened in cases where actors have shared policy core beliefs but differing democracy-oriented beliefs.

CONCLUSIONS

This study contributes a rare micro-level application of the ACF by exploring policy actors' democracy-oriented beliefs and the extent to which micro-level democracy-oriented belief variation exists within and across subsystems. This focus on democracy responds to critiques arguing the ACF has insufficiently attended to the theoretical implications that democracy, and other complex normative concepts, have for subsystem policy processes.

Variation in democracy-oriented beliefs exists across the full sample of participants in this study and across the subsystem contexts these actors are embedded in. Variation across the sample of participants refers to the individual actors having a variety of different beliefs about democracy. This finding is consistent with the democratic theory literature which classifies democracy as a contested concept (Gerring 2011) and empirical studies that have observed variation in democracy-oriented beliefs between individuals both within the same political system and across different democratic societies (Davis et al., 2022; Schaffer, 2000; Prothro & Grigg, 1960). This raises a question about whether differences in democracy-oriented beliefs between actors impact subsystem policy process dynamics and the overall quality of democracy. Variation across subsystem contexts refers to different patterns of democracy-oriented beliefs held by actors in aggregate from one municipal subsystem to another despite these subsystems existing in the same broader democratic political system. This brings into question the ACF's assumption that relatively stable parameters can be assumed to influence all subsystems and actors similarly.

Indeed, this chapter also considers how actors' democracy-oriented beliefs are integrated with other policy-oriented beliefs in their belief systems. Interrelationships between actor's democracy-oriented beliefs and their policy-oriented beliefs were observed at all three tiers of the ACF's policy belief system. This appears to be a widespread phenomenon that is consistent throughout the diverse purposive sample of policy actors in this study. The ACF has missed this relationship between policy actors' beliefs about democracy and the rest of policy actors' belief systems. Further, multiple policy actors drew connections between their own

democracy-oriented beliefs and their other policy-oriented beliefs, indicating actors are aware of these inter-connections to some degree. Such a finding opens the possibility that democracy-oriented beliefs serve a theoretically salient role in policy actor's preferences and behaviors in subsystem policy processes. Confirming or refuting this possibility is beyond the scope of the current chapter but will be investigated in future stages of the larger project associated with the study presented here. I argue findings in this chapter suggest the ACF's insufficient theoretical attention to democracy-oriented beliefs is one factor likely to be associated with mixed findings in some prior empirical studies of the ACF's belief-dependent hypotheses.

Future Research and Limitations

Several future research directions are indicated by findings of this study where robust discussion and conclusions are restricted by limitations to study generalizability. First, democracy-oriented beliefs are expressed universally among participants. Given the methods used to maximize diversity of perspectives represented among participants, democracy-oriented beliefs may be a near universal feature of policy actors in democratic political systems. Future research in additional democratic contexts is needed to overcome generalizability limitations.

Second, two categories of actors identified in this study engage in more than one subsystem, which are overlapping or nested, and emerged as theoretically relevant to subsystem definition during this study. One recent suggestion in the ACF literature is for further study of belief systems of actors involved in more than one subsystem as an avenue to unpack the mixed findings in tests of belief-related hypotheses (Weible et al., 2020).

Finally, state actors active in the nested state and local housing policy subsystems were anticipated a priori through the research design. Multi-subsystem actors emerged through the grounded theory approach as a theoretically relevant category for defining the focal subsystems and were not anticipated a priori, illustrating the potential of this methodological approach make theoretical contributions to the ACF on this front.

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Change in a Nested Subsystem: How National Coalitions Use Resources to Influence State Policy Decisions

Leanne S. Giordono

While the Advocacy Coalition Framework acknowledges the potential for imposition of policy change by a “hierarchically superior jurisdiction,” little explicit attention has been paid to the multi-level nature of coalition-based activity and policy change in a nested subsystem. And yet, public policy in a federalist system is inherently multi-level. Moreover, social policy is full of examples of shared federal-state authority, stemming from decades of decentralization (e.g., Bruch et al., 2018; Hatch & Rigby, 2015; Soss et al., 2011) that offer considerable opportunities for national actors to influence state decisions. In response, this study seeks to illuminate how national coalition actors in a federalist system leverage resources in an attempt to influence subnational policy change. Specifically, this study examines long-term services and supports—Day Habilitation and Employment (DH&E)—for individuals with Intellectual and Developmental Disabilities (I/DD).

DH&E services are provided within state-level subsystems that provide long-term services and supports, which is nested in the broader federal system of Medicaid Home- and Community-based Services (HCBS). Such services, introduced in the 1960s via state-level Medicaid waivers,

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are intended to enable adults with intellectual and developmental disability (I/DD) to successfully live in their communities. Over the course of the last two decades, that system has shifted from the status quo—which emphasized the provision of institutionalized day activities—to services that support participation in competitive and integrated employment (CIE).¹ However, there has been considerable variation in the timing and degree of state-level policy change (Giordono, 2019, 2020). These changes provide an opportunity to examine the nature of federal-state interactions in a nested system and to explore the means by which national coalitions use resources to influence subnational decisions.

Even though the DH&E system is unique in its goals and target population, it shares several characteristics with other social policy arenas. First, like the DH&E system, many social policies exist in a context of shared state-federal authority, in which increasing decentralization has yielded considerable opportunities for state-level variation (e.g., Bruch et al., 2018). Second, contracted service providers play an important role in this and other social service systems, yielding opportunities to better understand the role that such policy actors play in policy change. Finally, the system is characterized by cross-coalition agreement on key core policy beliefs but disagreement on the policy solution (Giordono, 2019), which is likely to reflect the experience of other low-salience systems in the social policy arena.

This study therefore poses the following research question: How do national advocacy coalitions operating in a federalist system influence subnational policy?

THEORETICAL AND CONCEPTUAL FOUNDATIONS

ACF canon acknowledges that a state (or local) subsystem can be nested within a subsystem at a higher (i.e., hierarchically superior) level of government. Indeed, the ACF Policy Change Theory explicitly acknowledges the unique power of a “hierarchically superior jurisdictions” to

¹ Services focused on institutionalized day activities were traditionally provided in segregated settings (i.e., mostly among other individuals with disability) and/or in a work environment with sub-minimum wages. In contrast, services and supports focused on competitive integrated employment (CIE) include those that typically prioritize work in integrated settings (alongside individuals without disability) earning competitive wages; such services and supports can take a variety of forms, such as supported employment, integrated employment, and customized employment (Giordono, 2019, 2020).

impose policy change (Jenkins-Smith et al., 2017, p. 147). However, as currently written, the ACF largely disregards the considerable scholarship on federalism in the United States, which identifies multiple forms of federalism, characterized by varying degrees of national efforts to use coercion and cooperation to influence state policies.

The early history of the United States was marked by distinct spheres of responsibility for the national government on the one hand and state/local governments on the other, more commonly known as “dual federalism” (Boyd & Fauntroy, 2000; Corwin, 1950). In the twentieth century, however, the country shifted toward alternative forms of federalism, variously labeled as “cooperative,” “creative,” and “contemporary” federalism (Boyd & Fauntroy, 2000; Elazar, 1962; Kincaid, 1990, 2018). These alternative forms—associated in particular with efforts to improve social and economic conditions—were characterized by the widespread use of intergovernmental grants (Boyd & Fauntroy, 2000), a rise in state governance capacity and innovation (Hanson & Sigman, 2021) and intergovernmental lobbying (Jensen, 2018). More recent scholarship also suggests that in some systems (e.g., environmental) the United States has experienced a rise in “coercive federalism” or “punitive federalism,” characterized by the use of financial or regulatory pressures by federal actors with the objective of influencing state-level policy decisions (Goelzhauser & Konisky, 2020; Kincaid, 1990, 2018; Posner, 2007).

The ACF explains policy change as a result of the strategic actions by coalitions of policy actors, and “textbook” ACF applications (Chapter 12, this Volume) tend to focus on only one level of government. However, the ACF also explicitly acknowledges (even embraces) the presence and actions of multiple types of actors within a policy subsystem. These actors may include elected officials and government agency officials, as well as advocacy organizations, researchers, and journalists, who hold no legal authority to change policy but have considerable influence within the subsystem. These actors wield a variety of resources—including formal legal authority, public opinion, information, mobilizable stakeholders, financial resources, and skillful leadership—in the pursuit of policy change (Sabatier & Weible, 2007). Only some of those actors hold any formal legal authority to “impose” policy change but are nevertheless likely to have an interest in influencing subnational policy decisions. Weible and Jenkins-Smith (Chapter 12, this Volume) describe “jurisdictional scale” (e.g., local, subnational, national, supranational) as a potential dimension

of study; as they note, this study explores interactions across subnational and national levels. This study, therefore, anticipates that coalitional use of resources is likely to be an important mechanism for influencing subnational policymaking.

However, we might expect the portfolio of resources used by national actors to look substantially different under cooperative federalism than under coercive federalism. For example, as suggested by the label, national coalitions in a coercive system may rely more heavily on formal legal authority than on other resources. Wiley et al. (Chapter 10, this Volume) describe a typology of resources that explicitly splits political resources into those that coalitions either allocate (leadership, mobilizable stakeholders/human capital, financial resources/capital) or influence (information, public opinion, and formal legal authority). We might expect national actors in a coercive system to attempt influence where possible, over allocation. In contrast, those in a cooperative system characterized by shared state and federal authority may turn to a broader portfolio of resources—and rely less on formal legal authority—to influence subnational actors. Turning again to Wiley et al. (Chapter 10), we might expect to see more use of resource allocation efforts (leadership, human capital, and financial capital) in such systems.

Expanding on Weible's (2008) typology of policy subsystems, which posits three "ideal types" of subsystems (unitary, collaborative, and adversarial), also helps to inform our expectations about nested systems. For example, we might expect a unitary subsystem dominated by a single coalition at both the national and subnational levels to exhibit the characteristics of a highly cooperative form of federalism. In such subsystems, national coalitions may simply use a minimum of non-authoritative resources for the simple purpose of coordination, in other words, cooperative strategies. Collaborative national subsystems with cooperative coalitions at the national level but substantial variation in coalition dominance or subsystem type at the subnational level may be associated with a mix of cooperative and coercive strategies. In such subsystems, national coalitions may turn to a broader portfolio of resources including targeted use of formal legal authority and other non-authoritative resources. Finally, we might expect a highly adversarial subsystem at the national and subnational levels to rely heavily on broadly applied formal legal authority—coercive strategies—as an important tool for influencing subnational policy.

STUDY CONTEXT

State DH&E systems emerged out of the policy changes of the early 1980s that permitted state to pursue “waivers” to traditional Medicaid funding for institutionalized care in order to provide services to individuals in their homes and communities (Duckett, 2000). Since the mid-1980s, state DH&E systems have had a history of offering some combination of day habilitation and employment-based services (Agronoff, 2013; Gettings, 2011; Mcgaughey & Mank, 2001).² Since 2000, a series of distinct state-level disability policy changes across the country have prioritized competitive integrated employment (CIE) services for individuals with intellectual and developmental disabilities, commonly known as “Employment First” policy (Giordono, 2019, 2020; Nord, 2014). As of 2020, 41 states had pursued some type of formal state policy action (legislation, executive order, or policy directive) and an additional 8 states showed evidence of other Employment First activity, leaving only one state without any observable support for Employment First Policy (Association of People for Supported Employment, 2020).

These changes were accompanied (or, in some cases, preceded) by federal government policy actions during the 2000s and 2010s, including the Olmstead Supreme Court decision in 1999, which restricted placement in segregated settings (US Department of Justice n.d.) and the HCBS final “settings” rule of 2014, which reiterated those restrictions and issued new employment-focused guidance (Centers for Medicare and Medicaid Services (CMS), 2014). However, the status quo (availability of an array of services, including sheltered workshops and use of sub-minimum wage) continued to prevail in a number of states. Moreover, the Federal Labor Standards Act (FLSA) continued to permit the use of sub-minimum wage.

Key federal government policy actions are shown in Fig. 1.

² During the 1980s and 1990s, stakeholders used the term “supported employment” to distinguish between traditional facility-based services (e.g., day habilitation, sheltered workshops) and new service options focused on services that support individuals to perform “paid work in normal, integrated business environments” (Wehman 1989, 2). The more contemporary term is “competitive integrated employment” (CIE) and the terms are used interchangeably in this study.

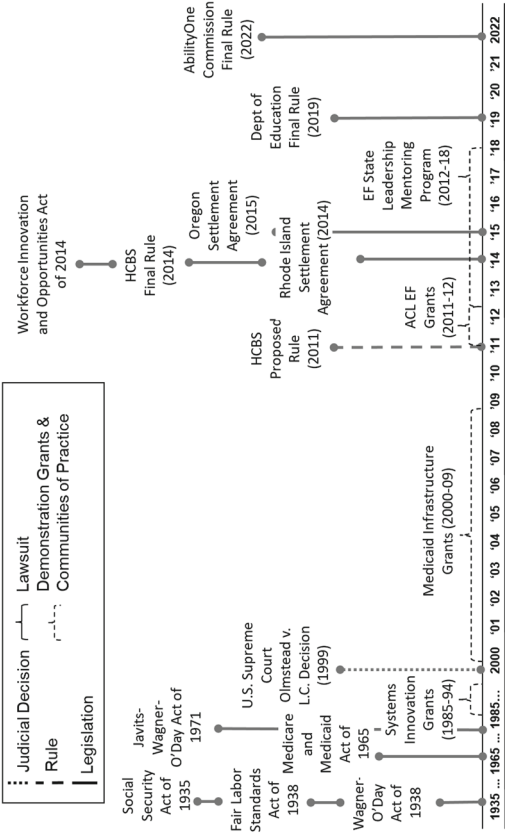


Fig. 1 Selected federal policy actions

METHODS

Data Collection and Coding

Primary data come from telephone interviews with 21 national policy actors conducted via telephone from June to September 2017 and averaging a total of 56 minutes per interview. See interview guide in Appendix 1. All interviews were recorded and transcribed by the author.³ National interviews were coded for coalition membership using the process and coding tags used by Giordono (2019). A system of coding tags to identify hierarchical actors, resources, and strategies was developed and applied to the national interviews. See Appendix 2 and Appendix 3 for coding schemes. National interview data were supplemented by the results of state-level comparative analyses conducted by Giordono (2019, 2020) and documents relating to specific state and national policy decisions.

Analytic Approach

The study uses a process-tracing approach (Beach & Pedersen, 2013; Collier, 2011) to examine the use of resources by national actors in the pursuit of subnational policy change. Process tracing is an in-depth within-case method for studying the causal mechanisms that lead to an outcome of interest in a single case (Beach and Pedersen, 2013; Collier 2011; Mahoney, 2012). In this study, the “case” is the DH&E system in the United States, the outcome is the aggregate shift in policy priorities at the state level, and the hypothesized mechanism is the use of resources by national actors to influence subnational policy change. This study illustrates how national policy actors influence subnational actors in a low-salience subsystem, with a particular focus on ways in which resources are leveraged in the interest of influencing state-level policy change.

The analysis began with an assessment of the presence and nature of advocacy coalitions and collaboration at the national level using hierarchical cluster analysis (see Appendix 4). Policy actors were categorized into organizational type using a simple typology (see Appendix 5). The presence and co-occurrence of codes was then used to identify resources and strategies used by coalition actors to influence policy decisions.

³ These interviews were conducted as part of a comparative study of state-level coalitions and policy changes (Giordono, 2019, 2020). The national interviews were used in the previous studies only as a source of background information.

Finally, these observations were triangulated with other secondary data sources to yield information about the causal mechanisms by which the dominant coalition at the federal level influenced policy change at the state level.

FINDINGS

Advocacy Coalitions

The results suggest the presence of two national-level coalitions, one of which was considerably smaller than the other. The larger coalition was associated with the desire to replace the status quo—including state-sanctioned use of sheltered workshops and sub-minimum wages—with competitive integrated employment (CIE) as the primary service for adults with I/DD. The smaller group of respondents were distinguished by their preference for offering or reinstating a full array of service options; they tended to represent “hold-outs” who would have liked to preserve the status quo policy. These coalitions show considerable alignment with the two state-level coalitions—labeled “Employment First” and “Choice”—identified by Giordono (2019).

Evidence of collaboration by national-level organizations in the policy process was widespread and non-collaboration was rare. Using Weible’s (2008) typology of policy subsystem “ideal types,” the two coalitions at the national level might best be described as falling somewhere between collaborative and adversarial. Widespread collaboration—on both employment and non-employment issues—was the norm and most respondents indicated a reluctance to avoid collaboration. For example:

It seemed almost coordinated, and in a way it was. I think the priority of the country around disability in the last ten years was much more about employment than it was about anything else. [N_ind60, August 15, 2017]

However, the national level also exhibited some qualities of an adversarial subsystem, including competitive coalitions and fragmented authority, specifically the involvement of multiple federal agencies with jurisdiction over various policies, and federal policies that almost directly contradict one another.

Resources and Strategies

This study finds that national coalition members employed most, but not all, types of these resources. Some resources were used at the national level, but primarily for the purpose of influencing national-level policy decisions. Table 1 presents the primary resources and related strategies by the level of policy decision being targeted.

Formal Legal Authority

Despite a legacy of early twentieth-century legislation that actively endorsed the use of segregated service provision and sub-minimum wages at the state level (which are generally aligned with Choice policy preferences), the Employment First coalition has used both judicial and regulatory strategies to influence state-level policy options.

First, a 1999 U.S. Supreme Court decision (*Olmstead v. L.C.*) held that public entities must provide community-based services to persons with disabilities under selected conditions. The U.S. Department of

Table 1 National coalition activity resources and strategies

<i>Resource</i>	<i>Strategies</i>	<i>Level of influence</i>	
		<i>State</i>	<i>National</i>
Formal legal authority	Lawsuits/judicial action and settlements Rulemaking, guidance, and enforcement	✓	
Public opinion	Platform statements Letters of support Media engagement		✓
Mobilizable troops	Stakeholder engagement Conference convening Direct lobbying Network organizing	✓	✓
Information	Conference convening Network organizing Research production	✓	✓
Financial resources	Leveraging funds Direct grants Indirect support	✓	
Skillful leadership	Placement in positions of authority Influencing opinion		✓

Justice used this case in two states (Oregon in 2012; and Rhode Island in 2015) to impel state-level policy change aligned with Employment First. These cases explicitly targeted subnational policy in only two states but served as a warning to other states that the federal government was willing to impose new policy via litigation. Multiple respondents emphasized the role of the Olmstead decision in subsequent state policy decisions.

You had the Olmstead Act that came into play during that same time so there was, you know, the advocacy community, legislation was pushing for that kind of change and that really began to open up the eyes of service providers and state agencies to respond to that. Now, I'm not going to say that it was always well-embraced, you know, because change is hard. And, you know, you like to think that you agree with change, but sometimes you have to be dragged kicking and screaming into change. So I do think, you know, as I look back through the history, that was a time where we were really seeing a real push towards community integration, and I give credit to Olmstead. [N_ind13, June 5, 2017]

A related, but distinct strategy leveraging formal authority was the development of new regulations and related guidance by federal agencies limiting segregated and sub-minimum wage employment services and instead promoting the use of integrated and competitive employment services. Figure 2 displays the legislation and regulations aligned with either Choice (light gray) or Employment First (dark gray), as well as the federal agencies responsible for adopting new regulations. Notably, new rules are clearly aligned with Employment First policy preferences, even when they stem from authority associated with historically Choice legislation.

A majority of respondents indicated that this strategic rulemaking and guidance was used to actively influence state policymaking. For example, the Centers for Medicare and Medicaid adopted the Home- and Community-Based Services (HCBS) “Final Rule” in 2014, which specified that service planning must be developed through a person-centered planning process and that services will be provided in the most integrated community setting, among other provisions (Centers for Medicare and Medicaid Services, 2014). One respondent noted:

So I think in general, states, particularly with the kick-in-the-butt from the HCBS rules, which says, ‘States you’ve got to give us a plan, and you’ve got to implement this systems change within five years.’ That got the attention of

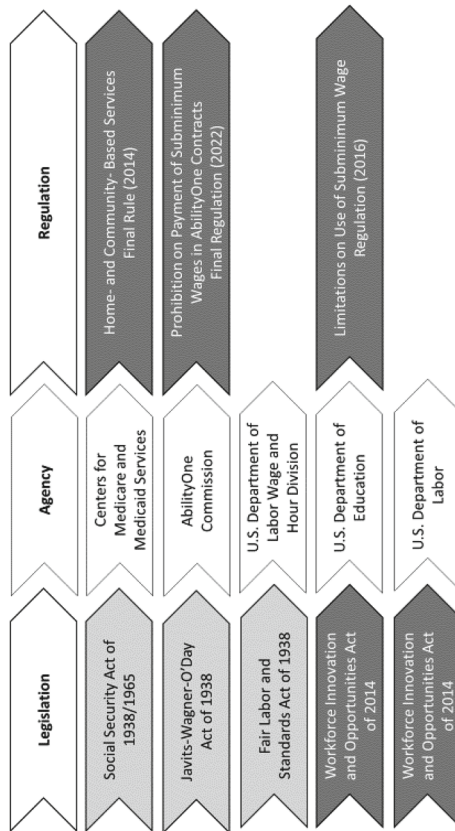


Fig. 2 Relevant legislation and regulations by federal agency

the states, there is very vigorous activity going on trying to figure out how to change policy. [N_ind14, June 5, 2017]

The Workforce Innovation and Opportunity Act of 2014 resulted in a 2019 rule by the Department of Education that defined competitive integrated employment, emphasized the provision of CIE-focused services, and limited the use of sub-minimum wage. Most recently, the AbilityOne Commission adopted a final regulation in 2022 prohibiting the use of sub-minimum wage payments by AbilityOne contractors. This last regulation, which was adopted in 2022 (after the interviews were conducted for this study) was not foreseen by study respondents. However, it is clearly aligned with the types of federal policy changes described by respondents. While these regulations are all aligned with the legislative acts that authorized administration and regulation by the various agencies, they are notable for their emphasis on policies that are closely aligned with Employment First policy preferences. Moreover, respondents highlighted rulemaking, guidance, and enforcement as an important source of state-level policy change:

State policy still is following federal dollars for the most part, so in my mind all that stuff goes to guidance out of CMS as relates to Medicaid waivers, and guidance out of RSA as it relates to appropriate placements and where those dollars go to. [N_ind65, June 5, 2017]

That said, some respondents also noted some level of ambiguity in interpreting the rules, leading to opportunities for Choice coalition activity at the state level:

Different states are doing it quite differently. In some states with sheltered workshops and day programs, there's a real resistance. They are trying to find ways around doing this ... [N_ind54, June 22, 2017]

Finally, despite the new rules, implementation was noted by some respondents as a sticking point at the state level. The HCBS rule, for example, initially required state transition plans to be submitted and approved by March 2019, but was subsequently modified to March 2023 (Centers for Medicare & Medicaid Services, 2020).

At this juncture, most of the formal legal authority in the form of recent legislation and rules lies with the Employment First coalition, both

in terms of coalition membership and policy choices. These national policies have been used to both coax and coerce states into shifting policy toward Employment First preferences. That said, legacy legislation from the early twentieth century continues to be aligned with Choice policy preferences, while ambiguity around the newest policies offers in-roads for continued Choice opposition at the state level.

Public Opinion

Public opinion was rarely mentioned as a key resource for influencing subnational change.⁴ While respondents described selected activities to craft platform statements, to sign letters of support for policy change, and to communicate with the media, these efforts were primarily intended to influence national policy. Moreover, respondents did not highlight public opinion as an important resource in general. Indeed, one respondent explicitly highlighted the lack of activity in this realm:

Our community does not do a good job of getting ... of working those angles to push public opinion towards a topic. N_ind60, August 15, 2017]

Instead, national respondents described considerable attention to direct influence over the opinions of subsystem stakeholders—including those that we would likely describe as “mobilizable troops”—or members of the concerned public, rather than the public-at-large.

Mobilizable Troops

Organizations and individuals with the potential to influence policy were described as a key resource by national respondents. Most respondents explicitly noted the use of strategies that they and/or other organizations used to engage state-level stakeholders. Targeted stakeholders can be broadly categorized into three groups, including: (1) state administrators and policymakers; (2) service providers; and (3) individuals with I/DD and/or their families. National respondents strategically connected with

⁴ Note that public opinion was discussed as a resource by Weible and Sabatier (2007), while “changes in public opinion” are also presented as a potential external event in the main ACF. In this study, I distinguish public opinion as a resource to mean that coalitions explicitly leveraged information about public opinion on the target population or policy issue to influence policy change.

these three groups for the purpose of influencing both state- and national-level policy. Moreover, national organizations tended to specialize in specific stakeholder groups according to their member base and/or mission, and tailored their policy engagement strategies accordingly.

Professional associations, for example, were important conveners of state-level service providers, administrators, and policymakers. At least eight professional associations with direct system relevance (i.e., as service providers or state administrators) were identified by respondents as key actors in the policy process; such organizations convened their membership base through regular conferences, meetings, and networks that offered opportunities for information-sharing. For example, the National Association of State Directors of Developmental Disabilities Services (NASDDDS) partnered with the research-focused Institute for Communication Inclusion at the University of Massachusetts Boston (ICI) to develop the State Employment Leadership Network (SELN), a voluntary, member-based network that provides technical assistance and guidance to state I/DD agencies. As one respondent described:

I think a plus was NASDDDS becoming invested in employment. And you know with us forming the state employment leadership network. I mean I think that has been at a point where there were started to be a little bit of a sea shift I think that happened with some grassroots advocacy that was beginning to happen around the country. [N_ind09, June 5, 2017]

Respondents described similar strategies among other professional associations, including those historically associated with the Choice coalition, such as the Source America network, which holds an annual conference for AbilityOne Non-profit Agencies (NPAs). An additional seven professional associations were cited as playing an ancillary role, wherein system policy actors would reach out to non-system associations to pique their interest and engage them in the policy process. Four respondents, for example, cited the engagement of National Governors' Association (NGA) in the policy process.

More traditional advocacy/alliance organizations tended to reach out to a broader base, including individuals with I/DD and their families. While some of these organizations operated as "membership organizations," they tended to charge low dues and connect directly with

individual service recipients and family members, as well as professionals. These observations echoed the following remarks made by one respondent, who stated:

Even though I'm working at a national level with a national parent organization ... what we try to do is get people to go out in their states for advocacy.
[N_ind45, June 9, 2017]

Collaboration with for-profit business was another, somewhat newer strategy used by both advocacy/alliance organizations and the federal government. The U.S. Business Leadership Network and Respectability, for example, were both organizations that are dedicated to leveraging for-profit support for policy change by making a business case for employment of individuals with disability.

While federal agencies did not engage as directly with the public, they had considerable interactions with non-profit organizations and national research institutions via contractual relationships. The Office of Disability Employment Policy (ODEP), for example, sponsored a variety of networks and other technical assistance resources explicitly intended to inform policy development (U.S. Department of Labor, Office of Disability Employment Policy, n.d.), and also convened an Advisory Committee on Increasing Competitive Integrated Employment for Individuals with Disabilities (U.S. Department of Labor, Office of Disability Employment Policy, 2016).

The federal government's "mobilizable troops," therefore, consisted of the non-profit organizations that were relied upon to deliver messages and information aligned with coalition policy preferences, as well as other federal government agencies with influence over state-level program implementation. Importantly, respondents explicitly described the movement of individuals aligned with the Employment First coalition into federal leadership positions in a variety of agencies, naming individuals who were recruited to the U.S. Department of Labor, U.S. Department of Justice, Centers for Medicare and Medicaid Services, and U.S. Department of Health and Human Services, as well as considerable movement between agencies. According to one respondent:

The disability rights community was very, very active and also recruited and held many high-level positions in federal government. [N_ind14, June 8, 2017]

Finally, some respondents described state-level lobbying by national organization staff, thereby acting as their own “mobilizable troops” in the effort to influence state-level policy. In particular, national organizations have established deep connections to state governors (noted above) as a strategic channel to state-level policy.

Information

In the system of I/DD services and supports, information also served as an important resource, as evidenced by the widespread use of conferences, meetings, and technical assistance networks described above. Both coalitions took advantage of these opportunities to provide information to key stakeholders. Research and education groups—typically associated with the federally funded University Centers of Excellence in Developmental Disabilities (UCEDD)—also used their “unique position to facilitate the flow of disability-related information between community and university” (Association of University Centers on Disabilities, n.d.) Among those institutions, the Employment First coalition had the clear advantage with respect to information generation and transmission. Specifically, four UCEDDs were cited by respondents for their heavy involvement in generating and transmitting research about competitive integrated employment, as well as promoting Employment First policies. For example, as one respondent stated:

John Butterworth from the University of Massachusetts has some data slides that he [uses to] compare the states who have participated in the SELN to the states that don't and their outcome employments are different, are better improved. I think that's because it did two things. As a community for those states it said, 'We're going to prioritize that we're going to talk about it with each other.' ... It kept the topic and the policies and the practices of supported employment very active in those states. [N_ind71, July 7, 2017]

While the Employment First coalition appears to be the primary producer of original research, there is some evidence that members of the Choice coalition also generated and distributed considerable information about service provision strategies and outcomes, specifically in the interest of clarifying coalition outcomes and influencing state policy decisions.

Financial Resources

While financial resources were an important source of influence, there was considerable overlap with other resource categories, especially information and mobilizable troops. Financial resources were used primarily by federal agencies, often in collaboration with non-profit partners, to influence the policy process at the state level, through three main channels: (1) federal funding as leverage, or policy change as a condition of aid; and (2) direct funds to states for demonstration projects; and (3) funds for indirect development of technical assistance, networks, and research.

The first channel—change as a condition of federal assistance—was most clearly exhibited by the Centers for Medicare and Medicaid rule tying the receipt of Medicaid funding for Long-term Services and Supports to the state-level planning process. Two respondents explicitly noted the strong connection between the rule and state-level resources, one of whom stated:

When I first started doing research in this in the early 2000s, ... 40% of states were still using some state-only general revenue funds to provide gainful employment services to individuals with intellectual and development disabilities. That has switched [to] Medicaid as the primary funder. That includes the state matches for Medicaid. They're the primary funder and those passed through state general revenue funds have really become very, very limited. ... I think there's that dynamic where the federal government said, a little bit like, "Hub, we've got a lot of power of the purse here that we could make good use of." [N_ind30, June 20, 2017]

Federal government agencies also provided resources to states in the form of demonstration grants, building on a long tradition that began in the 1980s (Wehman et al., 1989). The Office of Disability Employment Programs at the U.S. Department of Labor and the Administration for Community Living at the U.S. Department of Health and Human Services, for example, have both used financial resources to provide "Employment First" grants to states, as well as support the development of related communities of practice and state mentoring programs (Administration for Community Living, n.d.; Office of Disability Employment Policy, n.d.). ACL is also the agency responsible for distributing federal funds to the federally legislated network of Councils on Developmental Disabilities and UCEDDs. The Centers for Medicare and Medicaid also offered Medicaid Infrastructure Grants to states that were intended to

support employment outcomes by developing initiatives aligned with the Ticket-to-Work and Work Incentives Improvement Act (Andrews, 2013). Eight respondents noted a positive influence of demonstration grants on state policy.

Finally, the federal government supported other indirect efforts to develop and disseminate information to state policymakers and administrators, including research funding, federally funded employment networks, and technical assistance initiatives. One federal government agency representative described the influence of these tools as follows:

We have pretty close to touched just about every state in the country, whether it's through their membership in their state employment leadership network, or through the receipt of first two rounds of the partnerships and employment grants, through our individual state contracts. Because we consistently use this framework, I think it really forces states to think about things a different way. [N_ind30, July 20, 2017]

While selected other organizations, such as philanthropists, were also mentioned in connection with the distribution of financial resources, they were primarily described as being in the purview of federal agencies in this system. Most importantly, these resources were employed on behalf of Employment First policy change.

Skillful Leadership

While skillful leaders were named individually and lauded by respondents from both the Employment First and Choice coalitions, the specific skill sets that contributed to their influence were less systematically described. However, two respondents explicitly noted the successful efforts by the Employment First coalition to recruit and retain coalition members in high-level national government leadership positions. As one respondent stated:

I think the other thing that happened in part is political appointees and new-hires in Labor, in Education, Rehabilitation, in [the Administration for Community Living] came from the field, that knew supported employment and had every intention of trying to elevate it inside government. [N_ind06, June 9, 2017]

These explicit connections were supported by multiple descriptions of respondents' own trajectory throughout a variety of positions at the

local, state, and national levels, solidifying coalition presence throughout multiple levels. There was also some (thin) evidence that skillful leadership was responsible for efforts to influence public opinion.

Mechanisms

Based on the observations described above, national actors in this subsystem used a wide array of resources and strategies to influence subnational policy, as well as national policy. There were clearly efforts to use a modified form of hierarchical “imposition” via judicial actions by the Department of Justice and a variety of rules and regulations that leveraged states’ dependence on federal resources. However, national actors also invested considerable time and effort into a variety of non-coercive strategies intended to produce and disseminate information and engage stakeholders. Figure 3 presents the various resources and strategies used by national actors, and the connections between them. While not all of these resources were equally available to both coalitions, contributing to the observed balance of power, both the Choice and Employment First coalitions took advantage of most elements shown.

In the DH&E system, the Choice and Employment First coalitions continued to compete for power at both the national and subnational levels. At both levels, the Employment First coalition represented the newer approach to providing DH&E services and used coalition resources to replace the status quo with newer policies, with considerable (although incomplete) success. In contrast, the Choice coalition preferred to maintain the status quo. While Choice numbers and control of legal authority have waned, the coalition maintained influence at both the national and subnational levels, relying primarily on non-governmental organizations in combination with the leverage afforded by status quo policy.

Importantly, most of the resources and strategies used by national actors from both coalitions were not targeted at specific states. Rather, they were used to persuade more broadly to influence policy in all states. And even the judicial actions taken by the U.S. Department of Justice were targeted and were used more like a shot over the bow as a warning to states of expectations for change, rather than an effort to systematically require change in all fifty states simultaneously. While most respondents acknowledged state-specific variation, they generally did not describe efforts to target specific states, with the exception of selected judicial actions. In fact, in this subsystem—characterized by cooperative

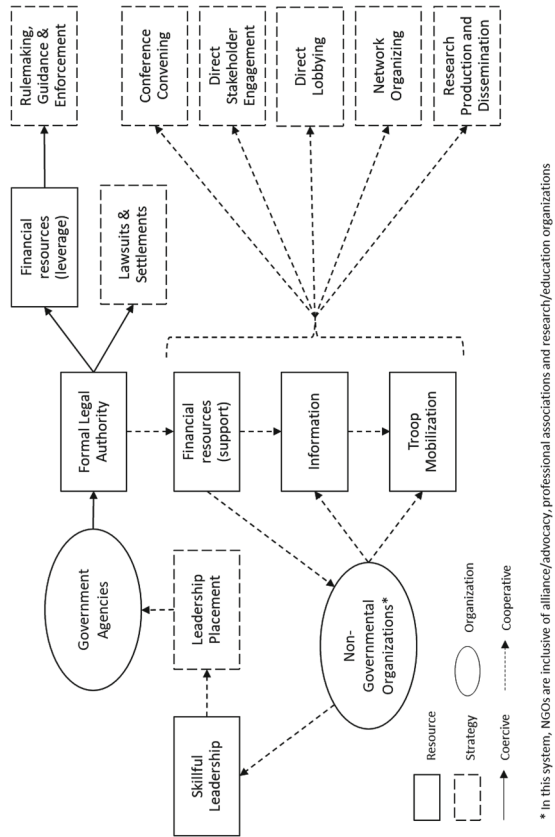


Fig. 3 National resources and strategies used to influence subnational policy

governance and a vulnerable target population—the option of simple hierarchical imposition is somewhat curbed by the overall dedication of both coalitions to the provision of appropriate services and supports that keep individuals in their homes and communities. As one respondent indicated:

This is a tricky business. I'm trying to find to put pressure on these systems of change and be more innovative and change the business model, but not just walk away and leave people sitting, walking, in a day center no better off. The advocates, myself included, have to be very conscious of that potential outcome, which is not what we want. ... When you've done it one way for a decade, and then suddenly, because of a lawsuit or a federal regulation or a state budget crisis, you're forced to do something different and you've had no experience, bad things can happen. [N_Ind04, June 5, 2017]

These efforts represent a combination of cooperative federalism (support and guidance as the carrot) and coercive federalism (judicial action and funding as the stick), which are primarily driven by Medicaid as the main source of funds for DH&E services. One state, at least, has chosen to move outside of the Medicaid system; Missouri passed legislation in 2021 that explicitly directs the state to develop its own version of a sub-minimum wage program (Hopkins, 2021; Relating to the Protection of Vulnerable Persons, 2021). It remains to be seen, therefore, whether the Employment First coalition will pursue other means of imposing change in states that continue to resist.

CONCLUSION

Overall, study findings are generally aligned with expectations that coalitional use of resources serves as a key mechanism for influencing subnational policy. Study results also illustrate expectations about the types of resources (mix of cooperative and coercive) used by a subsystem characterized by a collaborative national subsystem and considerable variation in coalition dominance at the subnational level.

Specifically, in the context of the DH&E systems, national coalitions leveraged a broad portfolio of resources—both cooperative and coercive—to influence subnational policymaking. However, national actors were selective in their use of coercive strategies, while they applied cooperative strategies more broadly. In particular, government agencies sympathetic to the Employment First coalition used two main strategies:

(1) leveraging existing federal Medicaid funds and agreements and (2) providing direct support for programming and policy change. However, legacy laws and rules also bolstered the Choice coalition's arguments for maintaining the status quo. Both coalitions used a variety of other cooperative resources. Public opinion was not typically leveraged to influence subnational policymaking. This finding, while notable, is not surprising. Jones and Jenkins-Smith (2009) hypothesized that issue salience (relative to other subsystems) will modulate the role of public opinion as both a constraint and resource.

Moreover, these findings, while using slightly different language, are broadly consistent with the typology of resources offered by Wiley et al. (Chapter 10, this Volume). However, this study highlights the nuance introduced by examining the use of resources at various jurisdictional scales (Chapter 12, this Volume). Specifically, the locus of control over various resources may shift according to jurisdiction; some government actors at the national level, for example, may have more opportunities to *allocate* formal legal authority (e.g., via rulemaking and enforcement decisions), while non-government actors (or government actors from the non-dominant coalition) can only hope to *influence* legal authority.

There are limitations to the study. The small number of respondents and largely qualitative methods limits the generalizability of the findings. However, the study sheds light on the use of ACF resources by national-level coalition actors and highlights the complexity of federally nested policy subsystems. Second, the observed outcome in this study—the aggregate shift in state-level policy over time—precludes direct associations between national actions and state-specific change. Nor does it explicitly test the second policy change hypothesis. Future research may find it useful to examine how national actions influence state-level policy decisions across a larger sample of states. Finally, this study only examines how national coalitions influence policy change in a cooperative federalism setting, offering a potential opportunity for theory development and testing.

The earlier theoretical discussion posited several potential determinants of national coalition resource use. We might specify and test more formal propositions about the degree to which national policy actors are likely to rely predominantly on cooperative or coercive strategies, and under what conditions. For example:

H3a: As subnational variation (in coalition power, subsystem type, policy preferences, etc) **increases**, national policy actors are more likely to use **coercive** strategies to influence subnational policy.

H3b: As subnational variation (in coalition power, subsystem type, policy preferences, etc) **decreases**, national policy actors are more likely to use **cooperative** strategies to influence subnational policy.

A related observation relates to the hierarchy of resources and related strategies, which may be more aligned with a set-theoretic approach, rather than a correlational approach. This study, in combination with Giordono's (2020) findings, suggests that national coalition resources may be necessary, but not sufficient, conditions for subnational policy change. And yet, national resources that make the most contribution to state policy change may be very different from state-level resources. For example, formal legal authority to approve (or overlook) state-level policy change is likely to be a necessary condition, while other national resources may simply be sufficient conditions for change, especially in combination with other state-level coalition resources. While states are widely seen as being laboratories for change, federalism scholarship suggests that their experiments are not being conducted in isolation.

APPENDIX I

Interview Guide for National-Level Leadership⁵:

Respondent:

Respondent ID:

Interview Date:

Introduction

⁵ National-level leadership will include leaders and staff members from federal agencies, national interest groups, national parent networks, and national professional associations. Other national-level professionals may include journalists, lawyers, researchers, commission members, and/or other individual stakeholders likely to have observed or contributed to state policy changes in a professional or voluntary leadership capacity.

Thank you so much for scheduling time to talk with me. As you may recall, I am studying state policymaking and practices related to Employment services for individuals with intellectual and developmental disabilities (IDD). I am especially interested in the conditions that lead to policy adoption or rejection among states. I would like to ask you some questions about policy changes from the national perspective. Just to confirm, are you still willing and available to participate in the interview? I expect it to last about an hour.

[IF NO, related to concerns]: I understand your concerns.

[Potential follow-up questions]:

- *Could we schedule the interview for another time? Or schedule it for two sessions?*
- *May I give you a little more information about my background?*
- *May I tell you a little bit about my interest in this topic?*
- *I appreciate your time. Please feel free to let me know if you change your mind.*

[IF YES]: Great. Before we begin, I'd like to review a few items. Your responses will be used to inform the findings of my study, but your identity will be kept confidential, and your name will not be linked to your responses in the final study. Your participation is voluntary, so you can refuse to answer selected questions or stop the interview at any time. Finally, may I audiotape our interview, so that I don't miss any of your comments?

[IF YES]: Give me a moment to turn on the recording [TURN ON RECORDING] ok, I'm ready. Do you have any questions for me before we start?

[IF NO]: I understand. I will take notes instead of recording the interview. Do you have any questions for me before we start?

- (1) Please tell me a little bit about your background and your current position.
- (2) How would you describe current state-level approaches to providing employment services and supports to individuals with IDD, including important policies and practices? *For my purposes, policies and practices can mean many things, from formal legislative action and rulemaking to the "business" of service provision to less formal norms and priorities.*

- (3) Thinking back over the last fifteen to twenty years, since about 2000, what major changes to state-level policies, practices, and priorities have occurred, for better or worse, relating to employment services and supports? [AS NECESSARY, FOR THE 2–3 TOP CHANGES CITED ABOVE]:
 - a. What (specifically) changed and when?
 - b. To what degree did the change occur across states?
 - c. What problem was the change intended to address?
 - d. Who were the most involved stakeholders or groups, and what was their position?
 - e. What conditions or events were the key drivers of change?
 - f. What were the main arguments for and against the change?
 - g. How did supporters and opponents attempt to influence the outcome?
 - h. How were differences resolved, if at all?
 - i. What role did you or your organization play in efforts to influence the outcome?
 - j. Which states moved quickly to change? Which states resisted change?
- (4) With which national stakeholders or groups does your organization collaborate most to influence policies and practices related to employment services, and why? How has this changed over the last fifteen to twenty years, if at all?
- (5) With which groups do you avoid collaborating, and why? How has this changed over the last fifteen to twenty years, if at all?
- (6) Is there anything else about state-level policies, practices, and priorities relating to employment services that you'd like to tell me about?
- (7) Is there anyone else that you would recommend contacting about these issues? [IF YES, request name and organization]

Thank you so much for your time. Please feel free to contact me if you have any additional thoughts after we finish our interview.

APPENDIX 2

Beliefs and strategies coding scheme.

<i>Primary level</i>	<i>Secondary level</i>	<i>Tertiary level</i>
Coalition support	Employment first	Activity Support Reservations about support
	Choice	Activity Support Reservation about support
Core beliefs	Stakeholder motivations	Concern Self-interest Values Fear
		Provision of services Individualization of services
		Government prescription of services good Government prescription of services not good
Policy core beliefs	Nature of the problem	Individuals are underengaged Individuals are underemployed
	Cause of the problem	Services are at risk Confusion about benefits Access to services Implementation Capacity to deliver services Individual skills Funding Economic opportunities Exposure to opportunities Services not available in area Low expectations
	Nature of capacity for work	All can work Not all can work
	Priority outcomes for individuals	Engaged Happy In community Independent Safe Wage Learning Self-determination

(continued)

(continued)

<i>Primary level</i>	<i>Secondary level</i>	<i>Tertiary level</i>
	Priority outcomes for family	Employment Finances Respite Stability
	Priority target populations	High-acuity Rural

APPENDIX 3

Actors, collaborative activities, and resources/facilitators coding scheme.

<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
Hierarchical actors	Federal agencies	Agency-specific codes
	State agencies and organizations	Organization-specific codes
	National non-profit organizations	Organization-specific codes
	National for-profit organizations	Organization-specific codes
	State	State-specific codes
Collaborative activity	Collaboration	National orgs State orgs
	Non-collaboration	National orgs State orgs
		Rule enforcement
Resources and facilitators	Formal legal authority	Legislation Lawsuit Rulemaking Judicial decision
		Research
		Direct organizational support
		Demonstration grants
		Medicaid funds
	Financial resources	TA and Networks
		Information dissemination
	Information	Information dissemination

(continued)

(continued)

<i>Primary</i>	<i>Secondary</i>	<i>Tertiary</i>
	Mobilizable troops	Technical assistance Contract support Leadership selection Stakeholder engagement
	Public opinion	Communication Media
	Skilled leadership	Lobbying (State) Lobbying (Natl)

APPENDIX 4

Hierarchical cluster analysis was used to identify the major coalitions at the national level using, following Giordono (2019). The between-groups method for binary data (Ochiai measure) was applied to the coded qualitative data (recoded to binary), and equality of means and goodness-of-fit tests were performed on the model using discriminant analysis

The hierarchical cluster analysis yielded two distinct clusters of policy-related beliefs at the national level, as shown in the dendrogram presented in Fig. 4. The canonical correlation statistic of 0.97 indicates that the clustering solution is a good fit, with 94% of the variation in the dependent variable (coalition membership) explained by the model. The results suggest that there are two main coalitions, one of which is considerably smaller than the other. These two coalitions are qualitatively aligned with the two coalitions identified by Giordono (2019): Employment First (EF) and Choice

The main explanatory variables in the model—the variables that explain the divergence in national respondents’ beliefs and policy preferences—are shown in Appendix 5 (Column 1). The distinctions between the coalitions are distributed among five main concepts, including: (1) Role of the government; (2) Value of individualized services; (3) Priority sub-populations; (4) Policy priority; and (5) Coalition activity.

APPENDIX 5

Coalition characteristics.

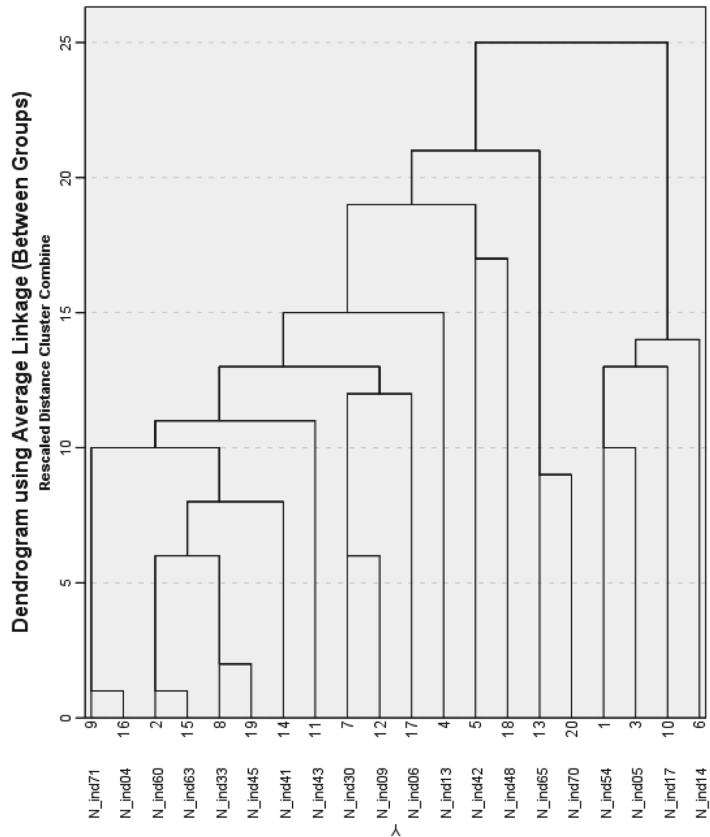


Fig. 4 Results from hierarchical cluster analysis

<i>ACF concept</i>	<i>System-specific concepts</i>	<i>Coalition differences</i>		
		<i>Employment first (1)</i>	<i>Divergence? (2)</i>	<i>Choice (3)</i>
Membership				
Coalition membership	n/a	80%	Yes	20%
Core beliefs				
Role of the government	Govt should guide choices Govt should not guide choices	Govt should guide choices	Yes	Govt should not guide choices
Services and supports	Valued Not valued		No	
Individualized services	Valued Not valued	No emphasis placed on individualized services	Yes	Emphasis placed on individualized services
Stakeholder motivations	Self-interest Values Fear		No	
Individual capacity	Everyone can work Not everyone can work		No	
Core policy beliefs				
Nature of the problem	Individuals un/underemployed Individuals un/underengagement		No	
Cause of the problem	Economic opportunity Lack of exposure Low expectations Services at risk Low access to services		No	
Priority outcome	Individual employment Individual safety Family respite		No	
Priority sub-population	High-acuity Rural	None	Yes	High-acuity
Secondary policy beliefs				
Data and evidence	Supports CIE Does not support CIE		No	

(continued)

(continued)

<i>ACF concept</i>	<i>System-specific concepts</i>	<i>Coalition differences</i>		
		<i>Employment first</i> (1)	<i>Divergence?</i> (2)	<i>Choice</i> (3)
Policy preferences				
Policy priority	Preserve or expand CIE Offer full array of services	Preserve or expand CIE	Yes	Offer full array of services
Evidence of coordination				
Activity engagement	Promote CIE prioritization Oppose CIE prioritization	Promote CIE prioritization	Yes	Oppose CIE prioritization
Collaboration	Collaborate w/EF Collaborate w/Choice	Collaborate w/EF	Yes	Collaborate w/Choice
Collaboration avoidance	Avoid EF Avoid choice	Avoid collaborating w/Choice	Yes	No avoiding collaboration

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Analyzing Beliefs and Coordination in Nascent Policy Subsystems

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INTRODUCTION

Now and then, new issues arrive on the public agenda, such as a sudden health crisis or a disruptive technology. These issues get media attention, and the political actors start thinking about how to best address them. Following the Advocacy Coalition Framework (ACF), such situations can be grasped through the concept of nascent subsystems, which contrast with mature subsystems that have been around for some time and that

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deal with established issues. Over time, nascent subsystems can develop into autonomous subsystems, or they can be absorbed by an already mature subsystem. From ACF literature, it is largely unclear how actors organize, interact, and agree in nascent subsystems, probably because their policy beliefs are not yet well established when dealing with a new issue. In consequence, patterns of coordination and strategic behavior are crucial. Actors in a nascent subsystem are likely to behave differently than the ACF would predict for actors in a mature subsystem, thus potentially affecting our understanding of policy-making processes and policy change. Against this background, we ask: What belief system structures and coordination patterns are typical for political actors involved in a nascent policy subsystem?

Answering our research question provides insights into broader questions on how political actors react to a new issue emerging on the political agenda, how they organize in the early stage of collective action, and how they try to influence the designing of policies. In a first step, we deduce three indicators for identifying nascent subsystems: a new (framing of an) issue on the agenda, no policy dealing with this issue, and no clear jurisdiction or geographical boundary wherein this issue is dealt with. We argue that subsystem maturity is not necessarily a question of the age of the subsystem or the amount of time a given issue has been dealt with, but a question of degree (Lemke et al., 2023). In a second step, we formulate a set of hypotheses on how actors would behave in nascent subsystems. We assess if expectations about belief coherence as well as coordination patterns, deduced from ACF hypotheses formulated for mature subsystems, also hold true in nascent situations. In a third step, we rely on empirical data from three Swiss cases (unconventional gas, food waste regulation, and antimicrobial resistance) and analyze the fragmentation and coherence of actors' belief systems, as well as the relation between coordination patterns and belief systems. Keeping the larger institutional setting of Switzerland constant but investigating different policy issues should give insights about both generally valid and subsystem-specific patterns of how nascent subsystems differ from mature ones. In a fourth step, we link the results back to the emerging literature on nascent subsystems and the ACF.

Knowing more about nascent subsystems is important for many reasons. First, situations of nascent subsystems are frequent in a highly dynamic societal context with rapid technological developments and

multiple systemic crises that continuously bring new issues onto the political agenda. Second, knowing more about nascent subsystems is crucial if we want to understand policy change happening through coalition change due to external events or cross- or inter-coalitional learning. However, in a nascent context, there might be no clearly established coalitions, affecting our understanding of inter-coalitional negotiation and learning and, thus, of how policy change is made related to new issues on the political agenda. Third, this chapter also reflects about the methodological approach to choose when studying nascent subsystems (more or less explorative, deductive, or inductive), depending on the empirical “circumstances” (e.g., geographical boundary clear or not), data availability (e.g., no clear set of actors dealing with the issue, no clear secondary aspects formulated by any official document, etc.), and data structure (e.g., unstable clustering of actors, low model fit, etc.).

Finally, we argue that knowing more about nascent subsystems also has practical implications: Many issues that found their way on the political agenda are finally never addressed, or the policies addressing these issues are perceived as insufficient or malfunctioning by many actors. The reason for this is very often political stalemate and conflict lines between competing actors and coalitions (see, e.g., the phenomenon of the devil shift; Fischer et al., 2016; Sabatier et al., 1987). Knowing more about when and how coalitions form around a new issue also helps in understanding and preventing such conflict. Furthermore, important milestones might be set in terms of potential policy solutions but also in terms of new venues or coordination patterns already at the nascent stage of a subsystem.

SETTING BOUNDARIES OF (NASCENT) SUBSYSTEMS

Following the ACF, “the policy subsystem is the primary unit of analysis for understanding policy processes” (Jenkins-Smith et al., 2018, p. 139). The constitutive elements of a policy subsystem are a topical area, a territorial scope, and a configuration of actors interested in the topical area, who join advocacy coalitions and try to influence policy outputs. These three elements define the *boundaries* of a policy subsystem and support the empirical application of the ACF. However, these boundaries are not well defined when a new issue arrives on the political agenda (Beverwijk et al., 2008; Lemke et al., 2023; Sabatier & Brasher, 1993; see also table in the online appendix). Nascent subsystems are characterized by one

or several issue-specific actor networks, “little history of policy solutions or outputs, little advocacy activity, and little public and decision-making attention” (see table in online appendix; Beverwijk et al., 2008; Ingold et al., 2017; Sabatier & Jenkins-Smith, 1999; Strich, 2015; Zafonte & Sabatier, 2004).

The literature has suggested different ways how nascent subsystems appear. In early work, Sabatier and Brasher (1993) as well as Sabatier and Jenkins-Smith (1993) mainly emphasized two “*inside* dynamics.” On the one hand, a nascent subsystem can be a spin-off of a mature one because some actors are dissatisfied with some of the issue aspects being continuously and deliberately kept out of the political agenda by the hegemonic majority of actors in the mature subsystem. These minoritized actors try to develop their own subsystem for dealing with the “neglected” aspects of an issue. On the other hand, policy issues might be re-conceptualized or perceived differently by all subsystem actors. Sabatier and Jenkins-Smith (1993) expect in the first, the “spin-off” situation, differentiated coalitions that mirror the pre-existing groups, and in the second situation more fragmented beliefs and unstable coalitions. Beverwijk et al. (2008) apply these theoretical ideas to show that the emergence of the education policy subsystem in Mozambique is a case where an issue is re-conceptualized. Strich (2015) provides a similar study when studying greater reporting and disclosure requirements that are imposed on trade unions through Bill C-377 in Canada (see table in the online appendix).

Recent literature about nascent subsystems focuses on the “*outside* dynamics” of a subsystem when a new issue arrives “from outside” of the political agenda (Lemke et al., 2023; Wiedemann & Ingold, 2023). There are two expectations on what could happen in terms of subsystems: On the one hand, if the issue is absorbed by a pre-existing subsystem, coalition structures are mirrored from the mature subsystem. On the other hand, if the issue produces its own subsystem, fragmented belief systems and “coalitions of convenience” or “ephemeral coalitions” are expected to emerge (Ingold et al., 2017).

Besides the appearance of a new issue on the agenda due to inside or outside dynamics, further indicators for a nascent subsystem are the absence of a policy solution (in terms of subsystem output¹) to the perceived problem (Lemke et al., 2023) and the absence of knowledge in what jurisdiction or at what decisional level to tackle the issue (Wiedemann & Ingold 2023). These three mechanisms are not independent of each other (see Table 1). A new issue in a nascent subsystem

Table 1 Boundary definition in nascent versus mature subsystems

<i>Indicators</i>	<i>Nascent subsystem</i>	<i>Mature subsystem</i>
New issue on the political agenda	Dissatisfaction with issue framing by some subsystem actors Re-conceptualization of existing issue New issue arriving from “outside”	Agenda-setting process largely controlled by advocacy coalitions and subsystem actors
Subsystem outputs	No outputs yet (or very new but single output; see Fidelman et al., 2015)	Outputs and experience with minor or major policy changes
Responsibilities to tackle the issue	Not clear yet at what jurisdictional level or in what territory to regulate the issue	Clear geographical area and responsibilities and competences assigned (can also be multi-level or supra-national)

is not yet regulated, and no policy output has been introduced. In a situation when a new issue arrives “from outside” of the agenda, the concrete jurisdictional level where to tackle it is not yet clear. Furthermore, jurisdictional levels can also be re-defined in cases of dissatisfaction or re-conceptualization.

EXPECTATIONS ABOUT BELIEFS AND COORDINATION IN NASCENT SUBSYSTEMS

The ACF claims that a subsystem should be observed for at least one decade or more to understand or explain coalition formation and maintenance, policy learning, and policy change (Nohrstedt et al., 2023). Most empirical studies focus on mature subsystems and the policy changes therein (Nohrstedt et al., 2023; Pierce et al., 2017). The few studies of nascent subsystems (Ingold et al., 2017; Lemke et al., 2023; Stritch, 2015; Wiedemann & Ingold, 2023) conclude that some of the key assumptions of the ACF cannot be confirmed for nascent subsystems. In what follows, we first outline some key ACF assumptions and hypotheses as developed for mature subsystems. We then review the existing literature on nascent subsystems and summarize the findings of that literature with respect to the previously identified ACF hypotheses. We then propose

which hypotheses of the ACF can be tested in nascent subsystems or how they can be amended to fit with the nascent subsystem situation.

Beliefs and Coordination

The ACF presents a three-tiered belief system (Henry et al., 2022; Sabatier & Jenkins-Smith, 1993) and states that core beliefs are more stable and, thus, more decisive for coalition building and maintenance than secondary aspects. This idea is outlined in the ACF coalition hypothesis 2 (Nohrstedt et al., 2023; Sabatier & Jenkins-Smith, 1993), as well as in the belief homophily hypothesis (Gronow et al., 2022; Ingold & Fischer, 2014). The first states that “actors within an advocacy coalition will show substantial consensus on issues pertaining to the policy core, although less so on secondary aspects.” The second assumes that “actors with similar policy beliefs tend to collaborate.”

The literature includes some hints about differences between a nascent and a mature subsystem regarding policy core and secondary beliefs and their hierarchy. First, authors agree that in nascent subsystems, beliefs are more fluid and fragmented (Sabatier & Brasher, 1993). When studying the relationship between belief levels, this instability of beliefs over time is likely less pronounced with respect to policy core beliefs than secondary aspects (see also Gronow et al., this book). Consequently, in nascent subsystems, it is not clear whether and how groups of like-minded actors will build an advocacy coalition (Stritch, 2015; Wiedemann & Ingold, 2023). Belief congruence is more difficult to assess in nascent subsystems because there is not much knowledge about the beliefs themselves, and even less so for secondary aspects (Lemke et al., 2023; Wiedemann & Ingold, 2023). It is easier to identify policy core beliefs than secondary aspects in a nascent subsystem (and subsequently consensus among actors about them) because policy core beliefs are (1) more generally formulated and (2) “copyable” from other neighboring or similar mature subsystems (Gronow et al., this book). This uncertainty of assessing different types of beliefs also holds for political actors involved in a subsystem, as they only become experts of subsystem issues and policy solutions over time (Ingold et al., 2017). Therefore, the longer that actors are members of a subsystem, the more they can create a coherence between their core and secondary beliefs as well as the beliefs of their coalition peers.

In conclusion, we expect that:

Expectation 1: The belief systems of actors in nascent subsystems are fluid, fragmented, and incoherent.

More concretely, Expectation 1 materializes in the following sub-elements of cluster overlap, coherence, and consensus:

E1a: An actor in a nascent subsystem only displays a limited coherence between its policy core beliefs and its preferences for secondary aspects (**actor's belief coherence**).

E1b: Actors that agree upon policy core beliefs do not necessarily agree also on secondary aspects, and vice versa (**belief cluster consensus**).

In the ACF, the two key dimensions of beliefs and coordination do not operate independently of one another, as coordination within advocacy coalitions is hypothesized to be driven by shared beliefs (see also Pfeiffer et al. this book). The belief homophily hypothesis suggests that individual actors tend to choose coordination partners with probability proportional to the similarity in belief between themselves and potential partners (Gronow et al., 2022; Kammerer et al., 2021; Satoh et al., 2021). There is broad empirical support for this hypothesis in the literature on the ACF and policy networks (Calanni et al., 2015; Henry, 2011; Ingold & Fischer, 2014).

However, in nascent subsystems, belief systems tend to be not well articulated and are unstable over time (see Expectations, above). This makes it more difficult for actors to find like-minded others and to start coordinating with them. Given this difficulty, previous studies of nascent subsystems identify a wide set of other factors, besides joint beliefs, that impact actors' coordination and coalition formation (Jenkins-Smith et al., 2018, p. 149). Examples are actors sharing similar opponents versus trust in allies (Henry et al., 2011; Ingold et al., 2017; Stritch, 2015) or material self-interests and resources endowment of coalition partners (Matti & Sandström, 2011; Nohrstedt, 2011). Triangulating this with the hierarchy of beliefs, we expect that:

Expectation 2: Coordination among actors in nascent subsystems does not follow a clear belief-induced pattern.

More concretely, Expectation 2 materializes in the following two sub-elements of actors' coordination:

E2a: Secondary aspects can shape the coordination patterns among actors at least as much as policy core beliefs (**belief hierarchy for within-cluster coordination**).

E2b: Actors' coordination across belief clusters can be at least as strong as within-belief clusters (**across-cluster coordination**).

CASE AND METHODS

We analyze three nascent subsystems: unconventional oil and gas regulation in the canton of Neuchâtel, and food waste regulation and antimicrobial resistance (AMR) policy at the national level in Switzerland. Two of the three issues have arrived newly on the agenda (“outside dynamics”): hydraulic fracturing—also called fracking—for the extraction of unconventional oil and gas, and food waste. AMR was regulated under the water protection act and ordinance but in an insufficient manner in the view of some actors; this is why AMR is a case where we could witness dissatisfaction with the original framing of the issue (“inside dynamics”). In all three cases, there are no, or only preliminary, policy outputs, such as a moratorium (temporal ban) on fracking, a political strategy for AMR, and an action plan for food waste.

Data Gathering

Data stem from elite surveys sent out electronically in the winter of 2014 (fracking) and the summer/fall of 2022 (food waste and AMR). Response rates were satisfactory, reaching 54% (22 of 41 actors) in the case of fracking, and 71.2% (47 of 66 actors) and 62.7% (37 of 59 actors) for food waste and AMR, respectively. To identify survey partners, we relied on the traditional combination of the positional, decisional, and reputational approaches (Knoke et al., 1996). We first identified actors with the formal competences to regulate the issue (positional), then added the ones that appeared during the decision-making process (decisional). Finally, two to four expert interviews per case were conducted to validate the list and to add more actors if necessary (reputational). This is the “standard” procedure also used for mature subsystems. However, for nascent subsystems, we suggest emphasizing the reputational approach to compensate for a lack of policy process history and administrative routine and the attribution of clear competences to selected authorities. Hence, there is only limited material to conduct the positional and decisional

approaches. Survey respondents were, therefore, asked to add relevant actors. Overall, 22 actors for fracking, 47 for food waste, and 37 for AMR were retained for analysis, representing municipal authorities, administrative agencies, green NGOs, universities, and industry associations (for a full list of actors and actor types, see Appendix 1).

Policy Core Beliefs, Secondary Aspects, and Cluster Analysis

To identify policy core beliefs and secondary aspects in a nascent subsystem, we rely on the ACF literature (Sabatier, 1998) and on empirical ACF research of familiar subsystems in the same jurisdiction or of the same subsystem in other jurisdictions and countries. This last procedure is designed mainly to compensate for a lack of knowledge and documentation about potential beliefs and secondary aspects, such as policy instruments to regulate the new issue.

Potential policy core beliefs for oil and gas regulation in Neuchâtel are deduced from policy core beliefs investigated in energy policy in Switzerland (Fischer, 2015) as well as from other fracking cases (Heikkilä et al., 2018): economic efficiency, market competitiveness, environmental compatibility, citizens' security, security of supply, federal subsidiarity, international independence, and social equity. To identify the policy core beliefs for food waste, we consult studies on food waste (Beretta & Hellweg, 2019) as well as waste management in Switzerland (Duygan et al., 2018), which yield the following policy core beliefs: economic efficiency, market competitiveness, environmental compatibility, public health, security of supply, and social equity. For AMR regulation in Switzerland, policy core beliefs are deduced from studies investigating micro-pollutants in waters (Herzog, 2020; Schaub, 2021) as well as existing literature on AMR regulation in Germany (Vogeler et al., 2021): economic efficiency, environmental compatibility, citizens' security, market competitiveness, public health, autonomy of agriculture, and animal welfare. Policy core beliefs, in contrast to deep core beliefs, are specifically relevant for policymaking. We then ask actors to prioritize (high, medium, low) the policy core beliefs in relation to the relevance they attribute to each of the beliefs when it comes to regulating the issues of fracking, food waste, or AMR, respectively. These are clearly related to the issue and within the boundaries of the specific policy process investigated, which is why we consider them as policy core rather than deep core

beliefs. However, as many ACF applications have witnessed, it can be challenging to set the (empirical as well as conceptual) boundaries between the different belief levels of the three-tiered hierarchy (Jenkins-Smith et al., 2018).

Secondary aspects include policy instruments to regulate fracking, food waste, and AMR. For oil and gas regulation in Neuchâtel, we include a range of instruments that regulate the underground, and these are deduced from legal documents and environmental regulations in Switzerland: ten types of environmental regulations (including air and water quality control, infrastructure security, and the compensation of local communities) and five policies regulating the use of unconventional gas (exploitation, exploration, site development, moratorium, and ban). For food waste, we consult the recent action plan for the reduction of food waste (Federal Council, 2022), as well as a position paper from the World Wildlife Fund (WWF) and Interface (Landis & Heimann, 2021), to deduce 17 policy measures that cover the full range from regulative instruments to market-based and information measures. For the regulation of AMR, we deduce 15 measures from the existing political strategy for antimicrobial resistances (Federal Council, 2015). The strategy proposes instruments to both prevent and control this issue in the different affected sectors (water, agriculture, and public and animal health) ranging from coercive measures related to the import, manufacturing, and distribution of the antibiotics to voluntary instruments to prevent resistances, with public and private commitments.²

To identify the belief clusters of actors sharing policy core beliefs and/or secondary aspects, we calculate dissimilarity (Euclidian distances) of actors' positions toward the set of core beliefs and secondary aspects, separately. This results in a matrix of dissimilarity/distance: The cell between two actors indicates how distant they are in terms of core beliefs and secondary aspects. The bigger the number between two actors, the higher their disagreement on both dimensions. Zero would indicate complete congruence on all core beliefs and secondary aspects between two actors. Based on this dissimilarity matrix, cluster analyses (k-means clustering in R) clustering actors with small belief distances were computed.³

Measuring Belief Fragmentation

As shown above, different authors notice that in nascent subsystems “beliefs are fluid and fragmented” (Sabatier & Brasher, 1993), for example, unstable over time. With Expectations 1a and 1b, we propose two different ways on how to assess such fragmentation and fluidity, one focusing on the individual belief system of each actor and the coherence therein, and one focusing on actors’ joint agreement on beliefs (typically within a belief cluster).

Actors’ belief coherence: The ACF states that core beliefs translate into secondary aspects of some sort (Sabatier & Jenkins-Smith, 1993). Therefore, there must be at least an implicit logic between a policy core belief (e.g., the degree of state intervention prioritized to tackle a new issue) and the secondary aspect of choice (e.g., policy instrument to regulate the new issue). Expectation 1a is confirmed if actors lack coherence between the type of policy core beliefs they prioritize and the type of secondary aspects they agree upon.

Belief cluster consensus: Based on the cluster analysis introduced above, we observe whether actors cluster similarly on policy core beliefs and on secondary aspects. An indicator for this “belief agreement among peers” is the simple overlap in cluster membership between the clusters based on core beliefs and secondary aspects. Important differences in cluster memberships between both confirm Expectation 1b that actors do not agree on both policy core beliefs and secondary aspects in nascent subsystems.

Measuring Coordination Patterns

We present to all survey partners a list of the actors included in the analysis, and ask the following question: “With what other organization does your organization strongly coordinate actions when it comes to the regulation of fracking/food waste/AMR?” This question helps us to draw a coordination network among all actors in the subsystem, with “1” indicating the presence and “0” the absence of a coordination tie between two actors.⁴ In order to test Expectations 2a and 2b, we simply calculate the densities, thus the number of observed coordination ties compared to all possible ties within and across the belief clusters. The higher the number, the denser the coordination network within or across each cluster.

Within-cluster coordination: Expectation 2a is confirmed if there is no clear pattern of higher coordination densities within policy core belief clusters as compared to the coordination densities within secondary aspects clusters.

Across-cluster coordination: Expectation 2b is confirmed if coordination within belief clusters is not denser than coordination across belief clusters.

EMPIRICAL FINDINGS

Belief Fragmentation and Coherence

Parts of our analyses rely on the separation of actors into two belief clusters.⁵ In the heat maps (Fig. 1a–f), these clusters are separated by the thin white line between an upper and a lower set of actors. Actors appear on the vertical line, core beliefs, and secondary aspects on the horizontal axis. First, all clusters for each subsystem are different between policy core and secondary beliefs in each subsystem, suggesting that in all three cases there is no clear correspondence between how actors position themselves on policy beliefs or secondary aspects, respectively.

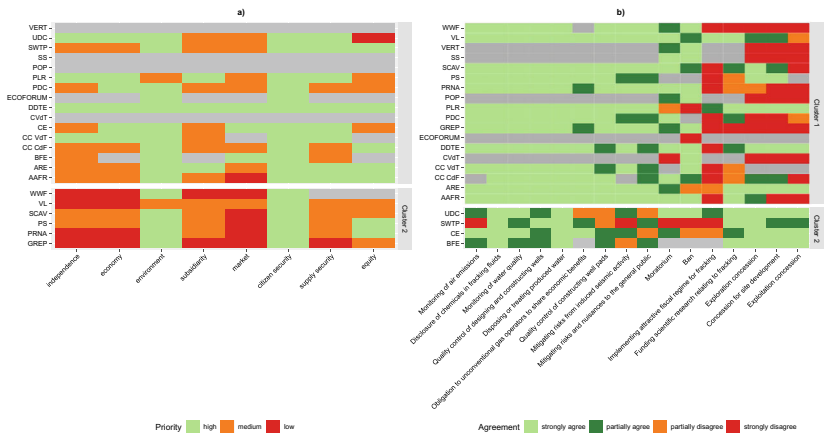


Fig. 1 Heatmaps indicating actors' beliefs and policy preferences in the three subsystems (*Note a* Policy core beliefs of fracking subsystem; *b* secondary beliefs of fracking subsystem; *c* policy core beliefs of food waste subsystem; *d* secondary beliefs of food waste subsystem; *e* policy core beliefs of AMR subsystem; *f* secondary beliefs of AMR subsystem)

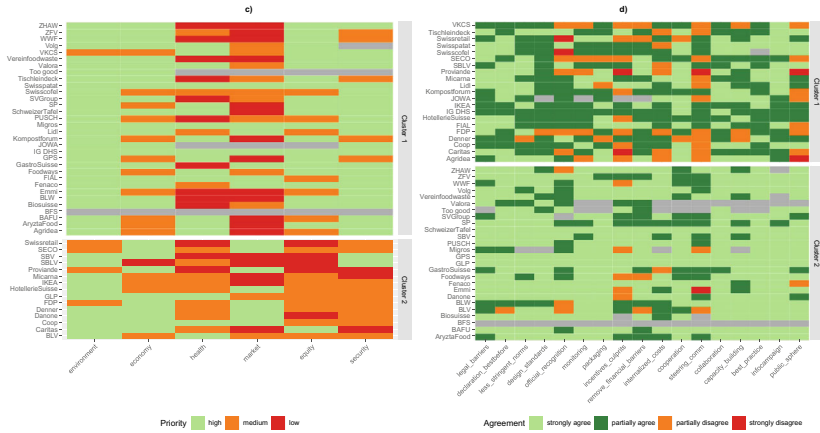


Fig. 1 (continued)

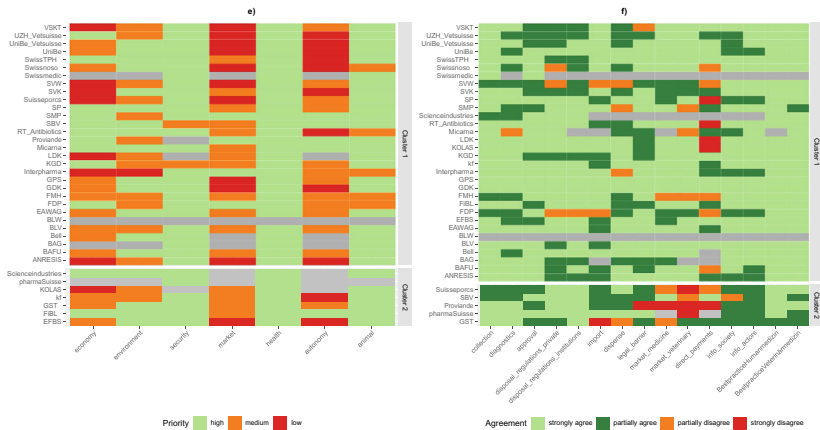


Fig. 1 (continued)

In the fracking case, and based on policy core beliefs, a set of 6 actors from the left-green spectrum of political actors (green NGOs and left and green parties) is separated from the rest of the 22 actors. By contrast, the structure based on secondary beliefs separates an even smaller set of 4 actors from the rest and includes all those actors opposed

to a fracking ban. Note that minority cluster 2 (four organizations) in secondary aspects has no actor overlap with minority cluster 2 (six organizations) in policy core beliefs, clearly suggesting a lack of coherence between policy core beliefs and secondary aspects.

In the food waste subsystem, 15 actors cluster together against the rest based on policy core beliefs. The policy core belief structure is very homogenous between the two clusters (see heatmaps in next section). However, the smaller cluster 2 (15 mainly economic and liberal organizations) exclusively prefers ecological compatibility and economic effectiveness for the regulation of the food waste sector. The larger cluster 1 (32 organizations) further prioritizes social equity and supply security. The clustering based on secondary aspects related to food waste regulation shows a more equally distributed repartition: 21 actors in cluster 1 and 26 actors in cluster 2. The types of actors are very diverse in both clusters, perhaps with a tendency that in the larger cluster 2, more pro-ecology actors are represented that prefer a wide portfolio of policy instruments to address food waste. This again suggests a lack of coherence between both types of beliefs.

In the AMR subsystem, the clustering of policy core beliefs creates one small cluster 2 (7 actors) against the rest. But like Food Waste, the prioritization of policy core beliefs is very similar between clusters 1 and 2. The smaller cluster 2 prioritizes animal welfare and citizens' security to a greater degree than cluster 1 does. A more nuanced picture is shown when looking at the cluster analysis of the secondary aspects: Again, a very small number of actors (5) is clustered against the rest (cluster 2). They include the farmers' association (SBV), different sub-associations related to meat production (Suisseporc and Proviande), and the pharmaceutical industry as well as veterinary medicine (pharmaSuisse and GST). They are strongly opposed to any market regulation or the introduction of market-based instruments.

In-Depth Belief Analysis

The fracking subsystem is the only one where actors form two clearly distinct clusters based on their policy core beliefs. The smaller cluster 2 is clearly a "pro-ecology" group with actors favoring environmental protection, citizens' security, and social equity. Regarding Fig. 1b and the heatmap of secondary aspects for the fracking subsystem, it becomes clear that the 4 (economic, right-wing) actors of cluster 2 prefer all the

policy instruments that do not impede the exploration and exploitation of unconventional oil and gas resources (the green cells on the right end of the heatmap), whereas the dominant cluster 1 is in favor of all instruments that regulate or even ban fracking to some extent (Fig. 1b).

The policy core heatmaps (Fig. 1c and e) for food waste and AMR look very similar: There is no strong divide between the two clusters. The decisive ideological conflicts in those two subsystems happen around secondary aspects and preferences for specific policy instruments (Fig. 1d and f). In cluster 2 of the food waste subsystem and based on secondary aspects (Fig. 1d), actors generally prefer all instruments and just want food waste to be regulated in “some form.” Cluster 1, including mainly business and right-wing actors, is also generally in favor of food waste regulation but has a disagreement with market-based interventions and the introduction of instruments that allocate responsibilities to the public sector (e.g., introducing a steering committee for coordination in the public sector). Similarly, cluster 2 in the AMR subsystem (Fig. 1f) is against all incentive measures and direct payments in the agricultural but also the veterinary and human health sectors.

Coordination Within and Across Clusters

In all three cases (see Table 2), we observe more coordination on secondary aspects than on policy core beliefs (Expectation 2a) and some densities (see values in bold) that are higher across clusters than within clusters (Expectation 2b). There are slight differences between the cases, however. In the fracking case, we observe a relatively high density within both clusters (and with respect to both policy core and secondary aspects). Mainly for cluster 1 in the secondary aspects, this is not so surprising: all actors were against any type of exploration or exploitation of the underground to take place in relation to fracking (Ingold & Fischer, 2016). However, the five actors (cluster 2 of secondary aspects) who were against a fracking ban also coordinated their actions well. Thus, in this case, which was confronted with a very specific policy output at the sub-state level (a discussion on a specific site and a related ban of fracking technologies), we observe patterns like those typically found in mature subsystems. However, we also see strong (and stronger than within-cluster) coordination efforts from cluster 1 to cluster 2, which would tend to indicate coordination that is not solely dependent on a consensus of actors on policy core beliefs and secondary aspects.

Table 2 Within- and across-cluster coordination densities

		<i>Densities in coordination</i>	
		<i>Cluster 1</i>	<i>Cluster 2</i>
<i>Fracking</i>			
Policy core beliefs (PCB)	Cluster 1	0.34	0.27
	Cluster 2	0.20	0.27
Secondary aspects (SA)	Cluster 1	0.30	0.36
	Cluster 2	0.13	0.58
<i>Food waste</i>			
PCB	Cluster 1	0.29	0.20
	Cluster 2	0.25	0.17
SA	Cluster 1	0.20	0.24
	Cluster 2	0.21	0.30
<i>AMR</i>			
PCB	Cluster 1	0.19	0.14
	Cluster 2	0.11	0.14
SA	Cluster 1	0.16	0.14
	Cluster 2	0.24	0.35

Coordination in the food waste subsystem is largely driven by one cluster. While cluster 1 coordinates more strongly on policy core beliefs, cluster 2 does so more strongly with respect to secondary aspects. Overall, coordination does not appear to be stronger based on secondary aspects than based on policy core beliefs (hence, no support for Expectation 2a). However, even more so than in the fracking case, and in line with Expectation 2b, coordination values across clusters are higher than at least some of the within-cluster coordination values. In the case of AMR, the minority cluster 2 displays a very high within-cluster density for secondary aspects and coordinates actions with cluster 1 more than cluster 1's own members do. This is evidence in support of both expectations.

DISCUSSION AND CONCLUSION

When looking at the belief coherence of single actors (Expectation 1a), we observe no clear pattern. Actors prioritizing a particular set of policy core beliefs do not necessarily agree on the related or respective secondary aspects to build a belief cluster. For example, the six actors of the pro-ecology cluster in the fracking case do not subsequently build their own

“pro-ban” cluster based on secondary aspects. They are absorbed in the large cluster of actors being in favor of a range of fracking restrictions and regulatory measures. The same holds true for the four actors opposed to a ban on exploring and exploiting fracking: they share their core beliefs with the very large and heterogeneous policy core belief cluster 1 and are not able (yet) to build their own advocacy coalition with coherent policy core *and* secondary beliefs. This is even more evident in the food waste and AMR regulation cases, where the composition of actors between the policy core and the secondary aspects is clearly incoherent: In both subsystems, there is a minority cluster 2 of secondary aspects opposed to any market intervention by the state. However, they do not build a coherent coalition where policy core beliefs would also predict this choice (e.g., by emphasizing market freedom; see Fig. 1c and e).

To test whether actors who agree upon policy core beliefs also agree on secondary aspects (Expectation 1b), we assess belief cluster overlap. Generally speaking, we can confirm this Expectation for all three cases: The overlap in membership of belief clusters is rather poor (see Appendix 2). The lack of overlap is more striking for the food waste and AMR cases on the national level than for the fracking subsystem in Neuchâtel. As opposed to the fracking case, the food waste and AMR cases show no clear pattern of one single cluster of actors with coherent policy core and secondary aspects.

In terms of coordination, we observe evidence for both expectations. Secondary aspects can shape coordination patterns at least as much as policy core beliefs: Even when the size of the coalition is rather equilibrated (e.g., food waste subsystem), the densities related to secondary aspects can be higher than those related to policy core beliefs (confirmation of Expectation 2a). Across-cluster densities are often higher than within-cluster densities. In nascent subsystems, coordination is, thus, not shaped by beliefs only (confirmation of Expectation 2b) and more strongly by secondary aspects than by core beliefs. However, the belief homophily hypothesis is also not always corroborated in mature subsystems. Calanni et al. (2015) and Pierce et al. (2017) are among several that find that this belief homophily is more prevalent in adversarial policy subsystems than in collaborative ones, which suggests that perceived threats of opponents trigger policy actors to coalesce with like-minded others (e.g., devil shift; see Fischer et al., 2016). Furthermore, the literature on mature subsystems concludes that depending on the context and institutions at play, different belief levels (policy core or secondary aspects)

become more or less relevant (Cairney et al., 2018; Koebele, 2020) in relation to coordination patterns.

In this chapter, we ask what belief system structures and coordination patterns are typical for political actors involved in nascent subsystems. Still, our discussion is implicitly based on the assumption that beliefs are less fragmented and more coherent and consensual in mature subsystems. Many ACF applications could confirm the belief hierarchy (and that actors tend to agree more on policy core than secondary aspects; Nohrstedt et al., 2023; Pierce et al., 2017), but some applications also showed more coherence on secondary than policy core beliefs (Malkamäki et al., 2021; Sommerville et al., 2022) or changes in intra-coalition belief cohesion over time (Lundmark et al., 2018). However, these inconsistencies are sometimes related to how a researcher defines a policy core versus a secondary belief or how these beliefs are measured (Nohrstedt et al., 2023).

Overall, in the AMR and the food waste subsystems, and to a certain extent even in the fracking case, the consensus on certain beliefs is very restricted, joint beliefs do not systematically lead to coordination actions, and there is low coherence between policy core beliefs and secondary aspects. This is in line with the literature on “ephemeral coalitions” or “coalitions of convenience” (Ingold et al., 2017; Stritch, 2015), but our results also show that future research should more systematically acknowledge that the different belief clusters or coalitions in a subsystem can have diverse degrees of maturity. Furthermore, future research should compare nascent and mature subsystems more rigorously to confirm these findings. Another pathway for the development of nascent subsystem-specific hypotheses would be the study of one or several subsystems from their early to the more mature stage and observing how a new issue arrives on the agenda along this pathway. Finally, given that actors might not know the beliefs of other actors that well and, thus, cannot coordinate according to beliefs, analyzing how actors meet in venues in order to learn more about the issue as well as about other actors’ positions and coordination opportunities is another important area for future research.

APPENDIX I: LIST OF ACTORS

Actors' List Fracking Neuchâtel

<i>Actor acronym</i>	<i>Full actor name</i>	<i>Category 1 = Pol-admin; 2 = Industry; 3 = NGO; 4 = Science</i>
AAFR	Friends of Farm Roberts Association	3
ARE	Federal Office for Spatial Development	1
BFE	Federal Office of Energy	1
CC CdF	City Council of Chaux-de-Fonds	1
CC VdT	City Council Val-de-Travers	1
CE	Celtique Energie Ltd	2
CVdT	Collectif Val-de-Travers	3
DDTE	Department of spatial development and the environment	1
ECOFORUM	Umbrella organization for the Protection of the Natural Heritage of Neuchâtel	3
GREP	Greenpeace Neuchâtel	3
PDC	Christian Democratic People's Party	1
PLR	FDP. The Liberals	1
PS	Social Democratic Party	1
POP	Swiss Party of Labour	1
PRNA	Pro Natura Neuchâtel	3
SCAV	Cantonal office of consumption and veterinary	1
SS	Solidarity	1
SWTP	Federal Office of Topography Swisstopo	1
UDC	Swiss People's Party	1
VERT	Green Party	1
VL	Green Liberal Party	1
WWF	WWF Neuchâtel	1

Actors' List Food Waste

<i>Actor acronym</i>	<i>Full actor name</i>	<i>Category 1 = Pol-admin; 2 = Industry; 3 = NGO; 4 = Science</i>
Agridea	Consulting of cantonal agricultural services	1
AryztaFood	Aryzta Food Solutions Switzerland	2
BAFU	Federal Office for the Environment	1
BFS	Federal Statistical Office	1
Biosuisse	Biosuisse	2
BLV	The Federal Food Safety and Veterinary Office	1
BLW	Federal Office for Agriculture	1
Caritas	Caritas	3
Coop	Coop Group	2
Danone	Danone Group	2
Denner	Denner Group	2
Emmi	Emmi Group	2
FDP	Free Democratic Party of Switzerland	1
Fenanco	Fenanco	2
FIAL	Federation of Swiss Food Industries	2
Foodways	Foodways Consulting GmbH	2
GastroSuisse	Gastro Suisse	2
GLP	Green Liberal Party	1
GPS	Green Party of Switzerland	1
HotellerieSuisse	Hotellerie Suisse	2
IG DHS	Interest group retail trade Switzerland	2
IKEA	IKEA Switzerland	1
JOWA	JOWA AG	1
Kompostforum	Kompostforum	3
Lidl	Lidl Switzerland	2
Micarna	Micarna SA	2
Migros	Migros Group	2
Proviande	Sector organization of the Swiss meat industry	2
PUSCH	Stiftung praktischer Umweltschutz Schweiz	3
SBLV	Swiss Farmers' Association	2
SBV	Schweizerischer Bäuerinnen- und Landfrauenverband	2

(continued)

(continued)

<i>Actor acronym</i>	<i>Full actor name</i>	<i>Category 1 = Pol-admin; 2 = Industry; 3 = NGO; 4 = Science</i>
SchweizerTafel	Swiss Table—non profit	3
SECO	State Secretariat for Economic Affairs	1
SP	Social Democratic Party	1
SVGroup	SV Group	2
Swisscofel	Swiss Association of Fruit, Vegetable and Potato Trade	2
Swisspatat	Swiss potatoes interbranch organization	2
Swissretail	Association of retail trade companies	2
Tischleindeck	Tischlein deck dich	3
Too good	Too good to go	3
Valora	Valora Group	2
Vereinfoodwaste	Food waste association	3
VKCS	Association of Cantonal Chemists Switzerland	1
Volg	Volg Group	2
WWF	World Wildlife Fund Switzerland	3
ZFV	ZFV Group	2
ZHAW	Zurich University of Applied Sciences	4

Actors' List AMR

<i>Actor acronym</i>	<i>Full actor name</i>	<i>Category 1 = Pol-admin; 2 = Industry; 3 = NGO/health; 4 = Science</i>
ANRESIS	Swiss Centre for Antibiotic Resistance	4
BAG	Federal Office of Public Health	1
BAFU	Federal Office for the Environment	1
Bell	Bell Group	2
BLV	The Federal Food Safety and Veterinary Office	1
BLW	Federal Office for Agriculture	1
EAWAG	Swiss Federal Institute of Aquatic Science and Technology	4
EFBS	Swiss Expert Committee for Biosafety	4
FDP	Free Democratic Party of Switzerland	1
FiBL	Research Institute of Organic Agriculture	4
FMH	Swiss Medical Association	3
GDK	Conference of Cantonal Health Directors	1
GPS	Green Party of Switzerland	1
GST	Swiss Veterinary Society	3
Interpharma	Association of Switzerland's research-based pharmaceutical	3
kf	Consumers' forum	3
KGD	Swiss Calf Health Service	3
KOLAS	Swiss Conference of Cantonal Agriculture Services	1
LDK	Conference of Cantonal Agricultural Directors	1
Micarna	Micarna Group	2
pharmaSuisse	Swiss Pharmacists Association	2
Proviande	Proviande	2
RT_Antibiotics	Round Table Antibiotics	1
SBV	Swiss Farmers' Association	2
Scienceindustries	Business Association Chemistry Pharma Life Sciences	2
SMP	Swiss Milk Producers	2
SP	Social Democratic Party	1
Suisseporcs	Swiss Association of Pig Breeders and Producers	2
SVK	Swiss Association for Small Animal Medicine	3
SVW	Swiss Association for Ruminant Health	3

(continued)

(continued)

<i>Actor acronym</i>	<i>Full actor name</i>	<i>Category 1 = Pol-admin; 2 = Industry; 3 = NGO/health; 4 = Science</i>
Swissmedic	Swiss authority responsible for the authorization and supervision of therapeutic products	1
Swissnoso	National Center for Infection Prevention	1
SwissTPH	Swiss Tropical and Public Health Institute	4
UniBe	University of Bern	4
UniBe_Vetsuisse	University of Bern, Vetsuisse faculty	4
UZH_Vetsuisse	University of Zurich, Vetsuisse faculty	4
VSKT	Swiss Association of Cantonal Veterinarians	1

APPENDIX 2: COMPOSITION OF CLUSTERS BASED ON POLICY CORE BELIEFS AND SECONDARY ASPECTS

		Cluster 1	Cluster 2
Fracking	Policy core belief clusters	Diverse actors cluster (16) AAFR, ARE, BFE , CC CdF, CC VdT, CE , CVdT, DDTE, ECOFORUM, PDC, PLR, POP, SS, SWTP , UDC , VERT	Pro-ecology cluster (6) GREP , PRNA, PS, SCAV, VL, WWF
	Secondary aspects clusters	Pro-ban cluster (18) AAFR, ARE, CC CdF, CC VdT, CVdT, DDTE, ECOFORUM, GREP , PDC, PLR, POP, PRNA, PS, SCAV, SS, VERT, VL, WWF	Pro-exploration cluster (4) BFE , CE , SWTP UDC
Food waste	Policy core belief clusters	Supply security cluster (32) Agridea, AryztaFood, BFS , Kompostforum, Swisspatat, VKCS, ZFV , SVGroup, Valora, JOWA, SP, Volg, GPS, Swisscofel, GastroSuisse, Lidl, Emmi, FIAL, WWF, Biosuisse, BAFU, Fenaco, SchweizerTafel, PUSCH, VereinFoodwase, Too good, Migros, Foodways, IG DHS, BLW, Tischleideck, ZAHW	Environment-economy cluster (15) IKEA , SBLV, Proviande SECO , Danone , Denner HotellerieSuisse, Caritas FDP , Micarna, GLP Swissretail , SBV , Coop , BLV
	Secondary aspects clusters	No market-based cluster (21) Agridea , Kompostforum Swisspatat , VKCS, JOWA Swisscofel , Lidl, FIAL IG DHS , Tischleideck , IKEA , SBLV, Proviande SECO , Denner HotellerieSuisse Caritas, FDP Micarna Swissretail , Coop	Integrative action against FW cluster (26) AryztaFood, BFS, ZFV SVGroup, Valora, SP Volg, GPS GastroSuisse, Emmi, WWF Biosuisse, BAFU, Fenaco SchweizerTafel, PUSCH VereinFood Waste Too good, Migros Foodways , BLW, ZHAW, Danone , GLP , SBV , BLV
AMR	Policy core belief clusters	Diverse actors cluster (30) Bell, GPS, RT_Antibiotics, SVK, EAWAG, FDP, Proviande , SwissTPH, SVW, Swissnoso, Micarna, FMH, SMP, UniBe, KGD, SP, ANRESIS, BAFU UZH_Vetsuisse UniBe_Vetsuisse, GDK, Suisseporcs , SBV , BAG, BLV, Interpharma, Swissmedic, BLW, VSKT, LDK	Security-animal welfare cluster (7) Kf , EFBS, Scienceindustries FiBL , GST, KOLAS, pharmaSuisse
	Secondary aspects clusters	Integrative action to regulate AMR (32) Bell, GPS, RT_Antibiotics, SVK, EAWAG, FDP, SwissTPH, SVW, Swissnoso, Micarna, FMH, SMP, UniBe, KGD, SP, ANRESIS, BAFU, UZH_Vetsuisse UniBe_Vetsuisse, GDK, BAG, BLV, Interpharma, Swissmedic, BLW, VSKT, LDK, Kf , EFBS, Scienceindustries FiBL , GST, KOLAS	No market regulation cluster (5) Proviande , Suisseporcs , SBV , GST , pharmaSuisse

Note Actors with the same color stay together in the same belief cluster (policy core and secondary beliefs). See Appendix 1 for actor acronyms and full names

NOTES

1. One way to study a nascent subsystem is to investigate a new policy output. Bandelow and Kundolf (2011), for instance, analyze the Galileo program and identify the process leading to it as a nascent subsystem. Similar is the case of Fidelman et al. (2015) and the Coral Triangle Initiative in Indonesia.
2. Note that policy core beliefs and secondary aspects where actors showed no variation in terms of their acceptance were not used for the cluster analyses but are still displayed in the heatmaps.
3. Several actors had missing values on their positions regarding policy core beliefs and secondary aspects. For these cases, we have imputed their core beliefs and secondary aspect values based on the mean value of core beliefs and secondary values of all actors. This procedure is relevant for the cluster analysis; in the heat maps, missing values appear as grey cells.
4. Note that for the case of oil and gas regulation in Neuchâtel, we asked about “information exchange” as the concrete type of coordination, whereas for food waste and AMR, we asked about “collaboration.”
5. We restrict our analysis to solutions with two belief clusters, as these are—besides many solutions that separate one single actor from all other actors—the cluster solutions with the least error (errors being represented by agreements on beliefs across clusters and lack of agreement of beliefs within clusters).

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Resource Allocation and Influence: An Advocacy Coalition Framework Analysis of the U.S. Violence Against Women Act

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The advocacy coalition framework (ACF) posits that a coalition's political resources influence policy change. Yet, the role of political resources in coalition behavior, as defined by Sabatier and Weible (2007), remains an underexplored theory component (Jenkins-Smith et al., 2018; Weible et al., 2011). Given that coalitions are composed of individual actors and organizations, resource ownership and control are challenging to capture. From an organizational behavior or social movement perspective, resources maintain the livelihood of the organizations and subgroups within the coalition. These two functions (policy change and livelihood maintenance) are not mutually exclusive. This overlap in function helps explain why resource deployment lacks a distinct placement in the framework and spans influence and policy advocacy activities. The role of resources is helpful in defining the coalition, supporting policy learning,

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and influencing policy change. The purpose of this analysis is not to test hypotheses about coalition structure, policy learning, or policy change. Instead, we conceptually define political resource interrelationships and their value to the policy process by examining how coalitions leverage them.

The longevity and evolution of gender-based violence policy offer a unique history of policy advocacy for analysis. We examine the advocacy coalition behavior around the United States (U.S.) Violence Against Women Act (VAWA) of 1994 and its four subsequent reauthorizations. We analyze qualitative datasets of internal communication and external observations of the dominant coalition that document advocacy activities spanning four decades. We also examine documents capturing the behavior of its rival coalitions. This analysis is limited to policy subsystem activity at the U.S. federal policymaking level. However, coalitions within this subsystem engage at all levels of governance.

The findings contribute to framework development in three ways. First, the data sources internal to the coalition and data sources external to the coalition told different stories about coalition behavior. Second, resources can be assessed through their allocation and their influence depending on the coalition's control over the resource. Finally, resource usage should not be aggregated over time. Instead, resource usage must be assessed in the context of policy type and technological eras.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

Advocacy Coalition Political Resources

ACF scholars centralize six political resources for coalitions to pair with particular strategies to affect policy change: *information*, *formal legal authority to make policy decisions*, *skillful leadership*, *mobilizable troops*, *public opinion*, and *financial* (Jenkins-Smith et al., 2018). Coalitions leverage their individual and collective capacities at different stages in the policy process to secure policy wins (Smith, 2000; Weible et al., 2020; Wiley, 2022). Strategically employed individual and organizational resources help a coalition translate policy core beliefs into policy language and, ultimately, affect policy change (Elgin & Weible, 2013).

Skilled resource coordination can decrease the proximity between the policy actor and decision-making power (Smith, 2000). However, this area of the framework regarding resource value and allocation remains a

black box and, thus, is weak in explanatory power (Weible et al., 2011). Longitudinally analyzing resources is challenging because resources are negotiated by varying actors and redistributed due to external events over time (Elgin & Weibel, 2013; Sotirv & Memmler, 2021). Few scholars have empirically examined the six resources collectively. Scholars tend to focus on individual resources or resource subgroups leveraged to affect policy formulation, change, and implementation at policy punctuations. Coalition resources have been examined in their relationship to environmental protection, climate, energy, technology, intelligence, and social policy change. Sabatier and Weible (2007) define resources as follows.

- **Information:** Technical information regarding the problem's severity and causes and the costs and benefits of policy alternatives is utilized by policy participants to win political battles against opponents.
- **Formal Legal Authority:** Coalitions place allies in positions of legal authority through elections or political appointments, as well as launching lobbying campaigns to sway officials with legal authority.
- **Skillful Leadership:** Leaders create an attractive vision for a coalition, strategically and efficiently use resources, and attract new resources to a coalition.
- **Mobilizable Troops:** Policy elites use members of the attentive public who share their beliefs to engage in various political activities, including public demonstrations and electoral and fund-raising campaigns.
- **Public Opinion:** A supportive public is more likely to elect coalition supporters to be legislators and other positions of legal authority and to help sway the decisions of elected officials.
- **Financial:** Money is used to purchase resources that allow coalitions to gain inside access to legislators and political appointees, launch media campaigns to earn public support, and advertise their policy positions.

The most frequently studied coalition resource is information in the form of scientific research and public regulations. Accurate and complete *information* supports venue shopping and policy implementation (Pralle, 2003). *Information* is leveraged to formulate policy (Kim, 2022) and then bridge formulation with implementation (Ellison, 1998). However,

shared *information* has the potential to be a constraint or a strength (Sabatier & Weible, 2007). When necessary information is unavailable, coalition members may seek it externally from those with differing or opposing beliefs (Sabatier & Weible, 2007). The coalition in possession of the information will then derive power from it. On the other hand, when members solely seek information internally, echo chambers form and limit learning.

Scholars have yet to define a resource hierarchy or agree upon resource value. Nohrstedt argued that using the right resources for the circumstance is more valuable than engaging all six categories of resources (2011). For instance, independently, *skillful leadership*, *financial* resources, and *public opinion* were effective in venue shopping (Albright, 2011; Jones & Jenkins-Smith, 2009). Ingold proposed a new resource to the framework, *reputational power*, as a proxy for *resource accumulation* (2011). In assessing the six resources in Chapter 8, Giordono found that social policy coalitions leaned heavily on *formal legal authority* and did not leverage *public opinion*. At the same time, the remaining four played a secondary role. Pierce split the six recognized ACF resources into nine and found a strong relationship between effective leadership and coalition strategy and a weak relationship between financial resources and strategy (2016). However, the relationship strengths differed between the two adversarial coalitions in Pierce's study. Thus, the set of resources can be leveraged uniquely to affect venue changes and policy implementation in alignment with the coalition's policy goals (Smith, 2000; Wiley et al., 2020). A better understanding of which resources are most commonly used to affect policy change would strengthen the ACF.

Resource Deployment: Allocate Versus Influence

A coalition's acquisition and allocation of a resource is as much a valuable consideration as how the coalition influences a resource. When a coalition possesses a resource, the coalition can decide when, how, and how much to allocate (Elgin & Weible, 2016; Pierce, 2016). However, some resources may not be under the control of a coalition. For instance, a coalition can strategically deploy scientific evidence to sway public opinion in favor of its policy goals but cannot control public opinion. In this case, allocating the first resource (information) influenced the second (public opinion). Scholars can assess the relationship between resources

by distinguishing which resources coalitions allocate and which ones they influence.

Function matters when studying resource deployment and subsequent impact. Resource allocation may be more helpful in assessing a coalition's size or capacity (Ingold, 2011). Resource impact would be a more relevant factor in determining a coalition's effectiveness (Pierce, 2016). Observing legislative maneuvers and policy wins could capture such effectiveness (Ellison, 1998). Resource function tells us more about their value to the coalition.

We propose relationships between resources where one or more drive another, as presented in Fig. 1. A coalition can control leadership, human capital (in the form of mobilizable troops), financial capital, and technical information. The coalition can leverage these four resources to influence public opinion and policymakers. Public opinion can also sway those with formal legal authority to act on its behalf (Pierce, 2016). Skillful leadership can use human and financial capital to distribute technical information via various strategies, such as social media or paid TV advertisements (Gupta, 2014; Pierce, 2016). Thus, resources can be observed through allocation and influence.

Assessing Resources: Insider Perspectives Versus Outsider Observations

The perspective from which we assess resources can tell us about the connection between resource value and resulting policy wins. Viewing coalition behavior through the news and online behavior highlights public-facing resource engagement while learning from insiders can identify the intentionality behind the resource deployment.

Troop mobilization offers a clear example of pairing resources and strategy. Depending on a coalition's strategy for mobilizing troops, their dispersion may be observed as an evident blast of the activity or an imperceptible sprinkling across target areas (Pierce, 2016). For instance, a gender-based violence victim advocacy coalition could guide followers through a social media campaign designed to sway public opinion about the seriousness of domestic violence. Alternatively, the coalition leader may guide members through a quiet email or letter campaign targeting one policymaker to ask her to support a bill. Behind-the-scenes strategic coordination of troops could be invisible to outside observers. The insider's perspective provides context to this resource allocation.

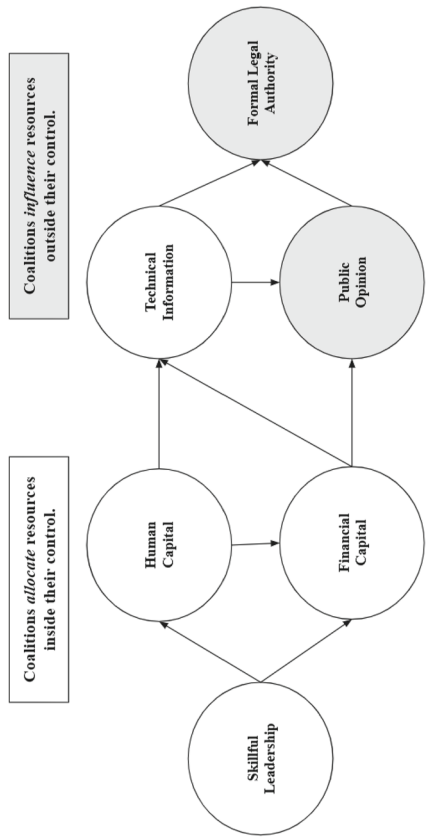


Fig. 1 Allocating and influencing political resources

Scholars may identify which resources the coalition leveraged by conducting interviews or surveys with coalition leaders and members (Ingold, 2011; Weible & Sabatier, 2006). Such an approach captures the coalition actor's or member's perspective and decision-making process (Wiley et al., 2020). A scholar can more easily capture stealthy resource deployment by talking with a policy actor because skillful leadership is often invisible, silent, and immensely powerful (Hilton & O'Leary, 2018). Outside observations do not bring the same empirical value for capturing the resource allocation decision-making process.

On the other hand, coalition insider knowledge of public opinion would be less accurate than external observation. The decision to share scientific information captures neither the public's understanding nor the opposition's consumption of the information (Weible & Sabatier, 2006). Thus, the insider perspective would not tell the entire story. In this case, external observation of public opinion provides more empirical value. Pairing insider perspectives and outsider observations provides a more comprehensive analysis of resource value and demonstrates their interdependencies (Nohrstedt, 2011; Smith, 2000).

STUDY CONTEXT

Social policy advocacy coalition activity is typically transparent and easily observable. The public nature of the coalition members, like nonprofits, demands accountability measures that often offer uniform data (e.g., public disclosures of financial and advocacy behavior). Gender-based violence policy advocacy occurs at all levels of governance, but its federal-level advocacy is particularly worth investigating. Gender-based violence federal policy in the U.S. is most often connected to three pieces of legislation: VAWA, the Victims of Crime Act, and the Family Violence Prevention and Services Act (FVPSA). These acts establish criminal justice authority, funding allocation and administration, and direct service protocols. VAWA resulted from an advocacy coalition borne from a social movement of survivors of gender-based violence and their allies. The evolution of VAWA serves as a strong case for empirically examining allocating and influencing coalition resources. A coalition advocating for safety and justice for gender-based violence victims has been active since 1978 and has heavily influenced social policy.

The Battered Women's Movement began in the 1970s to fight for criminal justice for victims of domestic violence (Schechter, 1982). A

collective effort of policy advocates allowed the Movement to formalize into organizations and shared policy goals, ultimately forming a coalition (Lehrner & Allen, 2009; Wiley, 2022). The coalition's deep core beliefs have remained steady for decades. In contrast, its policy core and secondary beliefs have evolved with its membership and changes in the policy subsystem (Abrar et al., 2000; Wiley, 2022).

The dominant coalition in this study began with a social movement of survivors of gender-based violence and their allies. Over time, as the coalition formed, it gained members in the form of direct service providers, Democratic and Republican representatives, and other allied groups. Throughout its existence, the dominant coalition sought to pass or modify many federal policies, including VAWA, International-VAWA, Title IX, Temporary Assistance for Needy Families, Victims of Trafficking and Violence Prevention Act, Volunteer Protection Act, Indian Child Welfare Act, and the Family Medical Leave Act. The coalition also worked at the state level on securing public funding for direct service programs and at the local level on issues such as mandated arrests and civil injunctions, reflecting the nested system posed by Giordono in Chapter 8. Initially, the critical areas of concern were domestic violence and sexual violence. Dating violence was added in the 2000 reauthorization, and stalking was added in 2005.

Figure 2 presents a timeline of gender-based violence federal legislation. The timeline demonstrates how the coalition worked across policy areas on overlapping issues, like social welfare, criminal justice, civil justice, and professional standards for their member organizations.

The 1994 passage of VAWA was a triumphant moment for the coalition, as were the 2000 and 2005 reauthorizations (Lehrner & Allen, 2009). In 2012, opposing coalitions disagreed with the new direction proposed in the bill, including special protections for same-sex couples, U Visas for human trafficking victims, and tribal authority to prosecute perpetrators. Legislative representation (e.g., Joe Biden) and ample mobilizable troops were sufficient resources in previous reauthorizations. Ensuring public opinion in their favor was easily manageable in 1994, 2000, and 2005. This was not the case in 2012. The political resources leveraged in previous authorizations failed the coalition because, for the first time, an opposition heavily contested the bill. The coalition regrouped and leveraged its resources in new ways over this two-year battle and in the following legislation reauthorization cycle. The longevity

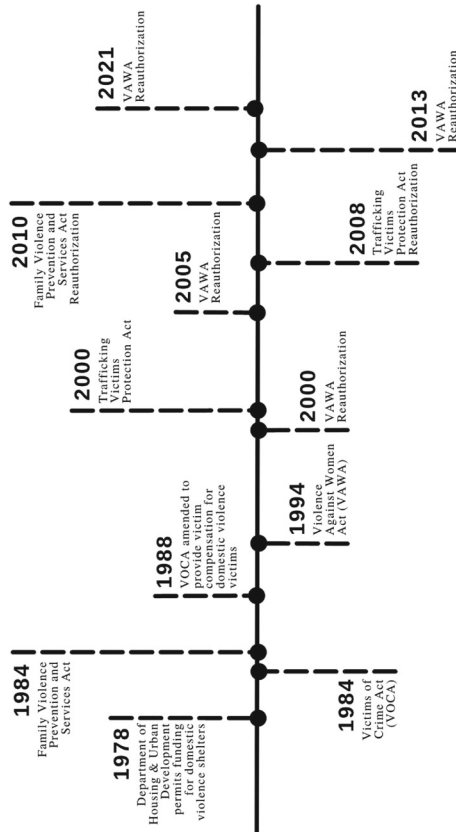


Fig. 2 Gender-based violence policy timeline 1980–2022

of this policy advocacy and documentation of resource usage justifies VAWA as a strong case for analyzing coalition behavior over time.

METHODS

We conducted a case study of a national domestic violence advocacy coalition during the VAWA era from 1994 to 2019 to better understand resource usage during bipartisan policy change versus a time of conflict (Eisenhardt, 1989). Data include documentation of biannual meetings of coalition members from 1978 to 2019 (including policy goals and policy beliefs), news stories, and original and amended bills. We documented the legislation changes in each reauthorization alongside legislative voting behavior, conflicts, and resource prioritization. Because the rival coalitions and groups were inconsistent over time, the internal examination only included the Pro-VAWA coalition. This analysis provides insight into the strengths of political resources given environmental changes.

Data Collection and Management

We used the National Coalition Against Domestic Violence (NCADV) annual meeting programs to observe behavior internally to identify how the dominant coalition leveraged resources. NCADV is the original and longest-standing formal advocacy coalition on this issue. These biannual meetings included board meetings and a conference where actors engaged over gender-based violence policy and practice. The 18 programs included 1923 one-paragraph uniform descriptions of the workshops held at each event. These paragraphs served as individual units of data. We extracted workshop descriptions (766) mentioning gender-based violence policy. Online Appendix A provides the meeting locations, the total number of workshops, and the number of workshops addressing relevant policy issues.

To observe behavior externally, we gathered 124 documents as evidence of coalition behavior from 1991 (the year the policy was first proposed) and 2022 (the most recent reauthorization). Documents were initially collected in Zotero reference management software. The research team captured the metadata for each document. Each document was sorted into folders labeled Pro-VAWA (58), Rival (46), and Neutral (20). Twenty documents were labeled *Neutral* because they did not advocate

for or against VAWA, captured a neutral stance, or addressed the Pro-VAWA coalition and the rival's policy goals. The team continued to locate documents until no new coalition actors or behavior emerged.

We took several steps to locate documentation of coalition behavior in the context of ACF resource usage. First, we pulled congressional voting records, press releases, and written testimony for each VAWA authorization. Second, we located news articles, blog posts, magazine articles, newsletters, and reports from 1991 to 2022 using web searches and the assistance of a University of Florida librarian. The news articles presented a range of ideologies and were primarily at the national level. Blogs were sourced from reputable nonprofits and news sources like the American Civil Liberties Union, the National Jewish Women's Council, and the Heritage Foundation. Two blog posts that provided more nuance to the opposition's viewpoints were sourced from non-mainstream sources.

Analysis

We used directed content analysis with a shared codebook that captured *who* (actors, special interest groups, and organizations), *what* (policy content and stance on the issue), *when* (stage in the policy process and the political climate), *how* (political resources used and actions taken), and *why* (motivation for political stance). The initial authorization (1994) and the four reauthorizations (2000, 2005, 2013, 2022) were treated as individual policy punctuations for analysis (Eisenhardt, 1989). Team coding and debriefing allowed for the corroboration of the codebook and the resolution of coding disagreements (Onwuegbuzie & Leech, 2007).

NVivo matrices and qualitative crosstabs allowed us to review each code by policy punctuation and compare codes. We considered the number of documents coded to each case and the amount of space in each document devoted to political behavior. For instance, if a concept was mentioned in one sentence of a 100-page report, we considered the value of the statement to be lower than if a five-page exposé centralized the same issue. We considered how in-depth each article went into VAWA issues to help capture the quality of data versus quantity.

News articles also provided insight into the other resources, like information. Information was captured in the context of the type of gender-based violence (e.g., domestic violence, sexual violence, dating violence, stalking, human trafficking, and female genital mutilation) and how the information changed over time. For instance, when domestic violence

and sexual assault were mentioned, we noted the political climate. We then compared that to when human trafficking and domestic violence involving tribal governance were mentioned. As information changed or increased, the political climate changed. This information was compared to the bill changes in response to the engagement of political resources by resource type. The internal data source was coded similarly and separately.¹ A similar codebook was used in a team-coding process. The variety of data types and sources served as a tool for the triangulation of findings.

We diagramed the policy subsystem for each authorization to identify the movement of actors from favorable to oppositional and vice versa. We assessed the number of hearings and votes to determine the value of resources used in each reauthorization. When more hearings occurred, the resources engaged were assessed for their role in the hearing. Finally, we charted policy belief evolution using NVivo matrices to identify unique collaborations. For instance, select feminist and Catholic groups emerged in the subsystem in opposition to the 2013 and 2019 reauthorizations.

Reflexivity

The lead author was politically active in the passage of the 2013 reauthorization. Throughout her domestic violence victim advocacy career, she was employed by several organizations named in the data. The team-based data collection, coding, and analysis tempered any tendency to document the author's professional experiences instead of what the data demonstrated. For example, an assumption that policy actors were against VAWA was unfounded. With a few exceptions, like men's rights groups, policy actors and groups sought an augmented version of the legislation that accounted for their policy core beliefs.

FINDINGS

Policy Subsystem: Dominant Coalition Evolution and Rival Coalition Emergence

By the 1990s, a criminal justice policy approach to protecting victims of gender-based violence was widely accepted. Some, like Sally Goldfarb, now a Rutgers Professor who assisted with drafting the VAWA legislation, argued, "The very existence of this federal law...altered the country's view

of violence against women as a significant national problem” (Law, 2019). Congress passed the 2000 and 2005 reauthorizations nearly unanimously. Then a policy punctuation occurred in 2012 when two versions of the reauthorization bill crossed paths in the House and Senate. The emergence of rival coalitions caused the bills to pass in one house while failing in the other. This partisan swing upset the equilibrium of the previously easy policy win. The 2019 and 2021 reauthorizations resulted in a stalemate when the Senate Leader, Mitch McConnell, refused to bring the bills to the floor. The legislation passed in 2022 under turmoil. However, the opposition viewed the 2013 and 2022 reauthorizations as regressive to their past policy wins and future policy goals. Online Appendix B presents the congressional votes and presidential signatures for each bill.

Policy Beliefs: Dominant Coalition

While their policy core beliefs differed greatly, the dominant coalition and its rivals agreed on three *deep core beliefs*: individuals have the right to live free from violence, the family is a safe unit within society, and public systems should keep their constituents safe. VAWA remained bipartisan through its 2005 reauthorization. The 2005 reauthorization faced challenges from men’s rights groups because the new version expanded law enforcement’s ability to enforce child custody orders in civil protection orders across jurisdictions. This amendment was driven by state-by-state subsystem shocks as defined in Chapter 5 by Gupta et al.² Still, this discourse did not noticeably affect voting behavior. The 2005 reauthorization expired in 2012, meaning the Pro-VAWA coalition could assess policy impact and needed amendments. Table 1 chronicles the dominant and rival coalitions’ memberships and policy beliefs over three eras: Pre-VAWA, Bipartisan VAWA, and Partisan VAWA.

By learning from its members at the local level at the biannual meetings, the dominant coalition added more specificity to the legislation’s protections in 2012, triggering the Partisan VAWA Era. First, law enforcement faced new standards for investigating cases involving LGBTQIA+ victims, recognizing same-sex partnerships as intimate partners or families. Second, the new proposed version authorized tribal nations to prosecute gender-based violence crimes perpetrated by non-tribal members on tribal land. Previously, the federal government was the designated authority over the crimes committed by non-tribal members. Finally,

Table 1 Dominant coalition and rival coalition actors and beliefs through three eras of U.S. gender-based violence policy

<i>Political Eras</i>	<i>Pre-VAWA 1980–1994</i>	<i>Bipartisan VAWA 1995–2010</i>	<i>Partisan VAWA 2011–2022</i>
	Dominant Coalition		
Policy actors	Feminists, Democrat, Republican, GBV victim advocacy organizations, National Organization of Jewish Women	Feminists, Democrat, Republican, GBV victim advocacy organizations, National Organization of Jewish Women, Corporations	Traditional feminists, Democrats, GBV victim advocacy organizations, Native American Tribes, Gun safety lobby, ACLU, Pro-choice groups, Human rights groups
Deep core beliefs: individuals have the right to live free from violence; the family is a safe unit within society; public systems should keep their constituents safe; <i>gender does not determine authority in the home; and firearms cause harm inside and outside of the home</i>			
Policy core beliefs: (1) definition of constituents is inclusive of citizens and non-citizen immigrants and is exclusive of the unborn in some cases; (2) convicted perpetrators of intimate partner violence should not have equal access to firearms; (3) tribal governments should have the authority to prosecute crimes occurring on tribal land regardless of the perpetrator’s citizenship; (4) reproductive care should be managed by the individual; (5) the law should provide meaningful protections for those at increased risk, such as LGBTQIA+ couples and individuals and immigrants; (6) the right to marry should be extended to all consenting adults			
	Rival Coalition		
Policy actors	Individual legislators	Individual legislators, Gender critical feminists, Men’s rights groups	Subgroups of conservative legislators, Gender critical feminists, Conservative feminists, Men’s rights groups, Abolitionist feminists, Gun rights lobby, Pro-life coalition, Anti-LGBTIA groups, Conservative think tanks, Catholic groups

(continued)

Table 1 (continued)

<i>Political Eras</i>	<i>Pre-VAWA 1980–1994</i>	<i>Bipartisan VAWA 1995–2010</i>	<i>Partisan VAWA 2011–2022</i>
Deep core beliefs: individuals have the right to live free from violence; the family is a safe unit within society; public systems should keep their constituents safe; <i>one's gender determines their authority in the home; firearms keep people safe</i> Policy core beliefs: (1) the definition of constituents is inclusive of legal citizens and the unborn; (2) all Americans have a constitutional right to a firearm; (3) the federal government supersedes the authority of tribal governments to prosecute non-tribal perpetrators regardless of the crime's location; (4) reproductive rights should be determined by the State and the Church; (5) gender-based violence victims should receive equal protections under the law without special protections for a single group; (6) the right to marry should be limited to heterosexual people			

special protections for immigrants were added, including access to birth control, abortions, and special visas for trafficking victims.

At this point, it became evident that the dominant and rival coalitions diverged in *policy core beliefs*. First, the definition of a constituent included the unborn in pro-life and conservative groups but not necessarily within the dominant coalition. Immigration status was also in question regarding one's place as a constituent. Second, the dominant coalition's definition of the family included same-sex couples but not always the unborn. Some rival groups always included the unborn and excluded same-sex couples. Essentially, the coalitions disagreed on who deserved special protections under the law.

Policy Beliefs: The Emergence of Opposition

The emerging opposition began as a coalition of convenience when the dominant coalition's policy core beliefs challenged multiple interest groups simultaneously (e.g., pro-life, family values, and gun rights). Belief homophily among rival actors played a role in the cooperative turn, supporting Gronow's findings in Chapter 1 where once disorganized actors extend their collaboration ties over newly divisive beliefs. Because of VAWA's evolving existence, the once potential coalition (one with little political coordination on this policy issue) began to snowball to include more conservative groups that coordinated their political power on other

policy issues. This snowballing moved them closer to two adversarial coalitions or a dominant coalition and a set of cooperative rival coalitions (Weible et al., 2020).

The dominant and rival coalitions disagreed on two deep core beliefs: a man's authority in the home and the role of firearms in civil society. This collective agreement in deep core beliefs brought the rival coalitions together against the policy core beliefs of the dominant coalition (Jenkins-Smith et al., 2018). The devil shift lost its metaphorical sense as more conservative Protestant and Catholic groups opposed the additions to the 2012 reauthorization.

Consider this characterization of the Pro-VAWA coalition's policy core beliefs in this quote from an article titled "The Violence Against Women Act and the War for Tax Dollars," where the author discussed a conservative think tank's evaluation of the 2013 VAWA Reauthorization.

VAWA springs from the bowels of radical feminism, a world where the inhabitants imagine that women are mercilessly exploited and enslaved by the so-called patriarchy. Women are always victims; men are always their oppressors.

This author reached beyond statutory concerns and into the character of the dominant coalition to sway public opinion through fear. Rather than pick apart the protections within the Act, the author makes it clear that VAWA threatens the well-being of society.

The Catholic Church took aim at the 2013 reauthorization, which provided protections for LGBTQIA+ individuals and couples and solidified access to reproductive health care for certain immigrant groups:

Conscience protections are needed in this legislation to ensure that these service providers are not required to violate their bona fide religious beliefs as a condition for serving the needy (Markoe, 2013).

The Catholic Church recognized that its deep core beliefs would be challenged if its members accepted funding authorized by this legislation.

Rival groups viewed guns as a safety mechanism backed by a constitutional right. At the same time, the dominant coalition stood by scientific evidence that established guns to be a hazard to victims of intimate partner violence.³ Guns rights groups argued that any gun control is unconstitutional, even the prohibition of gun ownership for convicted

perpetrators of violence. The National Rifle Association (NRA) referred to the gun restrictions as a “poison pill” inserted into the 2019 reauthorization legislation bill to make Republicans look anti-women if they voted against it.

The 2013 reauthorization even caused factions to emerge among feminists. Conservative feminists called for an “all women matter” approach rather than the specificity of high-need victims. Abolitionist feminists pushed back on the criminal justice solution to a cultural problem. These opposing views among feminists existed in the 1980s (hooks, 2000). Still, the emergence of a more considerable opposition gave voice to these often-silenced perspectives.

While the dominant coalition was consistent over time in its deep core and policy core beliefs, the coalition had to be able to respond to the varying beliefs across rival forces. A coalition could exhaust its resources if it tried to take on such a large variety of conflicts. Thus, the dominant coalition leaned into its strength: strategically allocating resources for the most impact.

Strategic Resource Deployment During Bipartisan Policy Change and Times of Policy Conflict

Dominant Coalition Resource Allocation and Influence

This section presents which resources were deployed but not specifically the strategy used. The internal dataset’s resources assessment contradicted the external dataset’s assessment. We identified information as the highest priority and public opinion as a low priority in both datasets. However, the prioritization of the remaining resources evidenced in the data was different. Thus, we found that independently examining the internal or external data would result in two different portrayals of coalition behavior. The internal communication documented leadership strategy and coalition troop activity, where leaders instructed troops on emerging policy issues and how to address them. Internal evidence tended to document *resource allocation*: for what purpose resources were designated. External observations were not privy to this evidence. External evidence documented past public actions and contributions to policy change or *resource impact* on achieving policy change. The data indicated that allocation and influence carry different values depending on which perspective is assessed.

Online Appendix A presents how the biannual conferences evolved to centralize policy issues. This change occurred because access to staff training and management resources was increasingly available online and less necessary at these events. The conferences addressed a far-reaching scope of policy issues, and coalition leaders allocated information to their membership. Due to the lengthy history of the national coalition membership, troops were situated locally in the direct service organizations serving nearly every county in the nation. Internal data indicates how the troops were consistently educated on legislative efforts at the biannual meetings, where they received marching orders. These advocates had a direct line to their congressional representatives and knew their policy core beliefs. Members were also valuable in policy formulation due to their knowledge of the day-to-day concerns of gender-based violence victims, which they shared at these same meetings. Thus, the internal communication documented how leaders mobilized troops in a unified nationwide conversation that tapped into a broader policy influence. The dominant coalition's allocation of human capital was rarely acknowledged in the external observation.

On the other hand, external observation captured the behavior of actors with the formal authority to act (i.e., senators, house members, and presidents) in the form of news articles and voting histories. One key supporter with the *formal legal authority* to act had been a consistent ally since the 1990s: President Joe Biden. He sponsored the original bill in the 1990s and voted for the 2000 and 2005 bills as a senator. Biden was Vice President when President Barack Obama signed the 2013 bill. Then, as president, he signed the most recent reauthorization bill in 2022. The coalition had other critical supporters in Congress, but none with the consistency and impact of Joe Biden. Biden celebrated VAWA as his "proudest legislative accomplishment." This ally was influenced by the coalition but never within the coalition's ability to allocate. Policymakers were rarely mentioned by name in the internal communication. However, online Appendix B provides a comprehensive voting history collected as external data.

Evidence of financial capital was nearly absent from the biannual programs and external data.⁴ As reflected in the NCADV board reports, some state-level or national organizations were supported by membership fees. Many organizations used their pecuniary resources to cover the cost of advocacy and, thus, dispersed the costs across coalition members. Direct service organizations allocated funding for organizational leaders

to travel to and from Washington, D.C., and their annual meetings. Thus, financial resource allocation was not prioritized in the available data.

Rival Resource Allocation and Impact

For the rival coalitions, identification and interpretation of resource allocation and impact were limited by the external nature of the data. Formal legal authority and skillful leadership were the most common resources found in the data, but this is partly due to the newsworthy activity of policymakers and leaders of national organizations like the NRA. Conservative policymakers served as a centralizing agent for the rival coalitions. Human capital in the form of mobilizable troops was rarely mentioned. However, the roles of coalition members were inferred, such as the political behavior of the Christian Right.

Unlike the dominant coalition, the rival tackled VAWA as a part of a larger, partisan vision. Troops spanned different conservative groups in the 2012 and 2013 policy battles. In 2012, opposition groups' long-term policy advocacy included blocking augmentations of the new bill because blocking VAWA altogether was not their motive. The rival indicated support for VAWA if it did not reference vulnerable groups. Acknowledging same-sex couples as a family in VAWA challenged their ability to block same-sex marriage in other bills.

The 2012 and 2013 bills faced the most prominent public response, as evidenced by news articles and blogs. The rival leveraged public opinions on the constitutional right to bear arms, moral arguments about personhood for the unborn, and recognition of same-sex couples as intimate partners or families. Conservative groups leaned heavily on their legislators but sometimes with mixed messaging.

For example, conservative Senate Majority Leader Mitch McConnell blocked the 2019 and 2021 reauthorization bills from Senate votes due to his stance against the "boyfriend loophole." Other conservatives, including Former President Trump, were for these more substantial gun restrictions that barred anyone with a domestic violence conviction from gun ownership, which only applied to married offenders at that time. News articles reported that the NRA was a pivotal contributor to conservative groups in 2012, 2013, 2019, and 2021 that afforded donations to legislators to affect voting behavior. The 2019 reauthorization stalled under the NRA's threat to rate policymakers negatively if they

voted against the NRA's preferences. The coalition's influence over a policymaker was evidenced in voting records.

Information allocation was not evidenced in the external data as a high priority for the rival coalitions. The rivals chose to invalidate the information presented by the dominant coalition rather than generate competing knowledge. The speed and volume of information rival coalitions allocated against the 2013 reauthorization outshined similar attempts by men's rights groups to block the 2000 and 2005 reauthorizations. At the turn of the century, the weak opposition relied on local attorneys' websites, defense attorneys' television advertisements and billboards, and newsworthy court cases. The influence on public opinion at that time was imperceptible. Later, the opposition allocated resources to discredit their foe through fast channels like social media platforms and blogging sites. This effort to disqualify information served to reduce its impact on public opinion.

CONCLUSION

This analysis provided an example of how rival coalitions emerge over time in response to one stable, dominant coalition. One might question how and why protections for gender-based violence victims could be challenged in this coordinated way. Such opposition is not so different from opposition to climate policy that aims to protect and sustain human life on earth. Once policies step into an individual's rights or a business's independence, policy contents are challenged. This was the case for opposition to the additions to the 2013 and 2019 VAWA amendments and, ultimately, the Act itself. This finding supports a hypothesis posed by Sotirov and Memmler (2012) that the greater the cultural and social subsystem interdependencies, the more likely minority coalitions holding distinct political cultures will cooperate, as demonstrated by the NRA and the Catholic Church.

Our analysis offers three contributions to ACF literature. **First, data sources internal to the coalition and data sources external to the coalition portrayed different stories.** Resource identification can be elusive because when in a (policy) battle, one does not typically share battle plans. Internal documentation captures allocation plans or actions, while external observation can better capture how the resource affects policy change. Through interviews, Wiley et al. (2020) found that skillful leadership happened behind the scenes rather than in the public eye. The

same was observed in this dataset. Observing such relationships between resources is challenging when news articles and other public-facing media are the sole data source.

Along these same lines, the scholar's perception matters equally. Dean (2017) argues that reflexivity brings value to all research designs. Reflexivity becomes particularly important when the scholar has personal and professional experience with the policy. Such experience can be inevitable in longitudinal policy coalition studies at the national or international level. Thus, the research design must account for observational bias (insufficient data sampling), researcher bias (personal contamination of instrumentation), and confirmation bias (a priori assumptions) (Onwuegbuzie & Leech, 2007).

Second, coalitions allocated the resources in their control and influenced those outside their control. Splitting resource analysis into the coalition's ability to control the resource (i.e., allocation and influence) proved helpful in analyzing coalition behavior. Understanding that a resource was dispersed gave insight into the intentionality behind behaviors. Skillful leaders effectively deployed troops that then distributed information. Together, these resources affected public opinion and formal leaders' decision-making. While resource allocations can be observed and are typically descriptive, measuring influence requires analyzing causal relationships between resources, strategies, and change. Refining these values can make room for scaling and causal analyses.

Third, context and time affected resource allocation and influence. Accounting for contextual differences can support more uniform analyses across policy arenas. By design, social policy outcomes are felt privately rather than commonly, like with climate policy. In social policy design, policy actors may assume personal responsibility for one's victimization rather than account for external influences on individual behavior. This makes room for the negative consequences of social construction, as evidenced in this study. Othering occurred when specific victims were not perceived as deserving of the policy's benefits (Ingram et al., 2007). Scholars should note that resource allocation and impact in social policy subsystems differ from other policy arenas, such as climate, energy, or defense policy, when applying these findings in future studies. As argued by Weible et al., "connect advocacy coalitions to their contexts" (2020, p. 1073).

Scholars must also account for the technological context in longitudinal studies. Punctuations in the data collection period of this study

aligned with punctuations in digital innovations. The capacity to mobilize human capital and distribute information evolved and must be accounted for. Like with Kim's (2020) findings, the growth in data collection and analysis tools available to coalitions increased the scope of the information collected and distributed. Thus, the capacity to develop and share information changed drastically. Broader internet accessibility, online news, and social media affected the speed of coalition formation, and we anticipate it will increase the speed of deconstruction. Comparing coalition resources over time and building on earlier scholarship requires acknowledging these evolutions. Resource usage cannot be aggregated over time; it must be compared in the context of technological eras.

Ultimately, data source and reflexivity are vital considerations for instrumentation. Resource control, as well as policy and temporal context, must be central in data analysis. We also identified three limitations in the data collection and analysis. First, this research design includes no first-hand accounts of coalition behavior. Reliance on news as a data source is inherently biased because its production is motivated by the newsworthiness of the event and a source's political agenda. The biannual meeting agenda documented anticipated discussions rather than actual conversations, except for the inclusion of board reports. In future research, adding interviews or field observations would allow scholars to draw out more intentionality in resource allocation.

Second, this analysis highlighted federal policy, though the dominant coalition simultaneously targeted local- and state-level policy. The resources identified in this analysis do not represent the entirety of the coalition's resources. Third, the analysis accounted for resource usage without capturing the strategies used to deploy them, which Elgin & Weible (2013) and Pierce (2016) establish as a valuable pairing. Resource allocation implicitly assumes a strategy. Future work should consider and distinguish the relationships between (1) strategies and (2) allocating resources under a coalition's control and influencing those outside their control.

NOTES

1. For a step-by-step account of coding and analysis of the internal data source, see Wiley (2022).
2. In *Jessica Gonzales v. U.S.*, the Inter-American Commission on Human Rights ruled that Gonzales's constitutional rights were

violated when local law enforcement refused to enforce her and her three daughters' civil protection order across county jurisdictional lines. Following police inaction, Gonzales's daughters were killed by her estranged husband despite her warnings to onsite police. The case resulted in a subsystem shock in Colorado and, ultimately, change at higher venue: U.S. Congress. The federal response via VAWA was to include full faith and credit of civil orders of protection against domestic violence, an essential step because this policy issue could not be resolved by subsystems alone. See Chapter 8 where Gupta et al. examine such subsystem shocks the resulting coalition opportunity structures.

3. Femicide is more likely to occur in a home where a gender-based violence perpetrator has access to a gun (Campbell et al., 2017). Fatalities increase when domestic violence is involved in a mass shooting (Geller et al., 2021).
4. Coalition financial allocations are publicly available in the 1990–2022 IRS Forms 990 filed by the national organizations, 1200 domestic violence centers, and 700 sexual assault centers. However, teasing out how much an organization spent on advocating for VAWA instead of the many other violence against women policy issues would not be possible with this data source. Such a financial analysis is out of the scope of this study.

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Evolution of the Oil and Gas Policy Subsystem in Ghana

Alex Osei-Kojo

The policy process is complex. This complexity emerges from several factors including conflicting values and goals, uncertainty, resource scarcity, and human nature. Consequently, analysts have developed various analytical tools to systematically study the policy process. One such analytical tool is called policy subsystem, which may be defined as a set of individuals or groups interested in addressing problems in a specific policy area, such as air pollution (McGee & Jones, 2019; Sabatier, 1987). Frequently, the study of policy subsystems has been limited to normative and theoretical questions, such as clarifying how individuals or groups seek to influence public policy, accounting for contemporary approaches to policymaking, and serving as a unit of analysis in conceptualizing policy development and implementation (McCool, 2005; Zafonte & Sabatier, 1998).

Yet, the emphasis on theoretical and normative questions lacks a crucial aspect of the puzzle: an empirical assessment of the evolution of a policy subsystem. Put differently, scholars have paid little attention to analyzing how a policy subsystem evolves. This chapter addresses this knowledge

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gap guided by the rationales expressed below. This analysis can clarify the connections among the issues that policy actors debate, the types of policy actors and the strategies they use, and the coalitions they form over time. Moreover, as McCool (1998) observed, such analysis can further support hypothesis formulation and predictions about actors, conditions, actions, and outcomes. Focusing on oil and gas governance in Ghana, this chapter addressed two interrelated research questions: (1) *What are the policy core beliefs of policy actors and what issues do they debate?* (2) *What strategies do policy actors use and what coalitions do they form?*

The case study was selected for two reasons. First, compared to cross-sectional data, the longitudinal data used for analysis can reveal patterns and trends in Ghana's oil and gas development. Such patterns and trends unearth insights that may be missed if one relies on cross-sectional data. Moreover, given the relatively young history of oil and gas development in Ghana, this case study provides a rare opportunity to understand the evolution of a nascent subsystem—insights that might be difficult to obtain in mature subsystems. The former allows us to explore the issue close to real time. The latter presents potential challenges, such as memory failure, which could distort an accurate account of the case.

THEORETICAL AND CONCEPTUAL FOUNDATIONS

Policy Subsystems

The concept of policy subsystems has been used under different labels in both public policy and political science scholarships. Notable among these labels are issue networks (Heclo, 1995); whirlpools of special interests (Griffith, 1939); iron triangle (Carter, 1964; Freeman, 1965; Lowi, 1979; McConnell, 1966); and policy monopolies (Baumgartner & Jones, 1993). While each label portrays a distinct meaning, they generally reflect a cluster of individuals seeking to influence public policy. Given its broad analytical utility, the concept of policy subsystems has become foundational to several policy process theories such as the Advocacy Coalition Framework (McGee & Jones, 2019).

Sabatier (1987) defined a policy subsystem as a group of policy actors who seek to address a policy problem in which they are interested. For Baumgartner and Jones (1993, p. 1045) policy subsystems are “relatively independent depoliticized subgovernments.” These definitions convey several attributes of policy subsystems. The first attribute is policy actors,

which refer to individuals or groups who actively participate in the policy process. The second attribute is semi-autonomy, meaning that policy actors are partially independent. Finally, policy subsystems are characterized by substantive and territorial dimensions (Sabatier, 1988). The substantive component reflects the policy issue under study, which is oil and gas governance in this chapter. The territorial dimension refers to the geographical context of the policy issue under consideration. In this chapter, it refers to Ghana.

While Griffith's (1939) studies may have popularized the use of policy subsystems, it gained foothold through the works of Mass (1951) and Redford (1969) who studied the river development and the civil aviation subsystems, respectively. In these and other related studies, emphasis was placed on distinguishing between institutionalized "state" actors and "societal" actors (Smith, 1993). State actors derive their authority from the state while non-state actors do not. For Sabatier (1988), the focus on non-state actors in governance derives from democracy's pluralism, emphasizing the role of multiple stakeholders to engage government business. At the same time, the expansion of societal needs presents the need for diverse stakeholders to address such problems.

Some scholars view policy subsystems as arenas of specialization (Sabatier & Weible, 2007). This means that policy subsystems focus on specific policy problems at a given time. Specialization supports policy actors in three ways. First, specialization enables policy actors to mobilize resources to effectively address policy problems (Sabatier, 1988). This occurs because policy actors often possess deep knowledge about a problem after studying it for at least ten years or more (Sabatier, 1987). Second, through specialization, policy actors within a subsystem can resist external influence because of their expertise, which non-participants may not possess (Zafonte & Sabatier, 1998). Third, using their specialized knowledge, policy actors influence agenda-setting through policy images, defined as how a problem is perceived in public (Baumgartner & Jones, 1993). By controlling agenda-setting and policy images, subsystems can influence policy outcomes and policy discourse (Howlett & Ramesh, 1998).

Actors and Policy Core Beliefs

The ACF views public policies as the outcomes of contests among diverse people and groups within the policy process (Sabatier, 1988; Schattschneider, 1960). These people and groups are called policy actors

and they come from diverse backgrounds, such as scientists, academics, elected officials, appointed officials, and journalists. Because these policy actors seek to influence public policy, they are considered instrumental; this means that they seek to influence policies in line with their policy goals.

The ACF posits that policy actors who are involved in policymaking have a three-level belief system called deep core beliefs, policy core beliefs, and secondary core beliefs (Jenkins-Smith et al., 2018). Deep core beliefs are fundamental axioms about human nature and the role of government in society. Policy core beliefs reflect people's views on policy problems and their preferred solutions. Secondary beliefs reflect people's preferences for the means (instruments) of implementing policies that emerge from policy core beliefs. While all these belief types are important, ACF scholars tend to emphasize policy core beliefs partly because they are limited to subsystems, have explicit and measurable roles in shaping public policy outcomes, and sustain coalition formation.

Prior ACF studies across the globe confirm the role of policy core beliefs in coalition formation. In South Africa, when Malkamäki et al. (2021) analyzed tree plantation policy, they identified policy core beliefs around environmental regulation, social costs of tree plantations, and decolonization through land reform. The study concluded that these beliefs facilitated coalition formation in South Africa's tree plantation context. Using in-depth interviews with 33 experts, Li and Wong (2020) examined the role of policy core beliefs in studying policy change and stability in China. The study found that changes to policy core beliefs about socio-economic problems led to policy change in the country's long-held one-child policy. In Australia, Sommerville et al. (2022) analyzed pill testing policy using news media articles, parliamentary and government reports, and grey literature. The key policy core beliefs revolved around the illegality of drugs, and the dangers they posed to people and society. Finally, Lindberg and Kammermann (2021) explored the role of advocacy coalitions in facilitating European Union (EU) energy transition. They identified policy core beliefs around the role of markets, state intervention, EU harmonization vs. national decision-making, and climate change. The key policy actors comprised lobbyists, electricity policy experts, and researchers.

Overall, the studies above suggest that policy core beliefs form a bedrock of ACF analysis, as they facilitate coalition formation. At the same time, policy change reflects alterations to policy core beliefs. Thus, a

useful beginning point in tracing the evolution of a policy subsystem may include explicitly identifying policy actors and their policy core beliefs.

Policy Actors' Strategies

The ACF asserts that policy actors use various strategies to influence public policy. Several policy actors' strategies are identified in the current literature, such as lobbying and appeals (Kitschelt, 1986), protests and demonstrations (Avelino & Rotmans, 2009), proximity of coalitions to policy implementers (Sabatier & Weible, 2007), and framing of rules (Majone, 1989). Sabatier's (1988) analysis identified several strategies: participating in public meetings, posting information online, communicating with news media, and generating and disseminating research and reports. Several empirical studies have confirmed and expanded on these and other sets of strategies. For instance, in analyzing the behavior of coalitions in Ghana's oil and gas governance subsystem, Osei-Kojo (2023) found a pro-oil and gas coalition that used framing in media debates. The main stable policy frames that were identified include: capacity building, local content and participation, emphasis on oil and gas, and energy security. In a study of Colorado hydraulic fracturing politics, Pierce (2016) examined the relationships among coalitions' resources, strategies, and policy change using survey data. The findings show that the winning coalition used a wide range of strategies to advance their policy goals, such as participating in public meetings, communicating with news media, testifying at public hearings, and taking legal action. Lastly, Nohrstedt and Olofsson (2016) analyzed Swedish hydraulic fracturing politics using publicly available data including news media, parliamentary venues (committee minutes and parliamentary debates), research reports, and web links. The authors identified an anti-hydraulic fracturing coalition that used several strategies, such as media engagement, alter perceptions of actors, change the view of incumbents, and raise political visibility.

A core insight from these findings is that there is no limit to the strategies that policy actors use to achieve their policy goals. The multiple strategies that are available to policy actors can provide them with more flexibility in their operations. A related insight is that policy actors can combine different strategies (e.g., engaging in public debates and research) to achieve their policy objectives. Indeed, Pierce's (2016) study demonstrates that the anti-hydraulic fracturing coalition in Colorado leveraged different strategies in pursuit of its goals.

While the insights on policy actors' strategies are useful, most studies rely exclusively on cross-sectional data, which constrain the analysis of trends and patterns in the activities used to influence public policy. Yet, if one thinks of policy strategies as the means to conflict expansion, then such strategies will likely wax and wane over time. This chapter explored this empirical gap by tracking the ebb and flow in policy actors' strategies in Ghana's oil and gas policy subsystem.

Advocacy Coalitions

The ACF theorizes that conflict is foundational to the policy process, and the people and organizations who engage in such conflicts are called policy actors. To win this conflict, policy actors form coalitions based on shared policy core beliefs (Jenkins-Smith et al., 2018). Several studies confirm the presence of advocacy coalitions in various policy subsystems (Weible et al. 2020).

Extant research analyzes coalition activities in high salience contexts, meaning situations where policy actors exhibit strong disagreement, and the public demonstrates keen interest in a matter (Weible & Sabatier, 2006). Selected examples of ACF research in high salience contexts are discussed below. Analyzing 502 news media articles using Discourse Network Analysis (DNA), Nam et al. (2022) examined the structure of advocacy coalitions in South Korea's nuclear energy policy subsystem. They found that policy actors aligned with distinct opposing coalitions. In another study, Ocelik et al. (2019) examined energy transition debates among policy actors in the Czech Republic. The authors used organizational survey data and exploratory social network analysis. Two ideologically distant coalitions were identified: the industry coalition and the environmental coalition that influenced policy change. In Canada, Ziegler et al. (2019) analyzed the debates around supervised injection sites in Ontario. After reviewing government reports, media sources, and policies, the authors identified several advocacy coalitions at all three levels of government, law enforcement, health practitioners, and community groups. Other studies have focused on low salience, meaning policy topics in which public interest might be minimal. Using mixed-methods approach, Giordono (2020) examined the ACF's applicability to Day Habilitation and Employment services systems in two U.S. states: Washington and Pennsylvania. The study identified the presence of two advocacy coalitions: Employment First and Choice in both states.

Some studies report dominant coalitions that influence subsystem affairs. One such study is Olofsson et al.'s (2018) study of shale oil and gas policy change in India. The paper used news media data collected between 2010 and 2015 to analyze policy change by India's Ministry of Petroleum and Natural Gas. The authors found a dominant coalition that favored shale oil and gas development with preferences for energy security and regulation. Li and Wong's (2020) study in China examined the birth control policy subsystem using expert interviews. They identified a dominant coalition in China that successfully mobilized its resources to defend its core beliefs. In a more recent analysis, Sommerville et al. (2022) examined pill testing policy in two Australian jurisdictions. The analysis relied on several documents including news media, Hansard, reports, and grey literature. The study found a dominant "harm reduction" coalition that was instrumental in introducing a pill testing policy.

This brief review reveals that advocacy coalitions exist, and they seek to influence the policy process in both high salience and low salience contexts. Moreover, advocacy coalitions can be competitive or dominant in influencing subsystem affairs.

DATA AND METHODS

This chapter used a case study design that draws on various data to explore the evolution of the oil and gas policy subsystem in Ghana. This design was deemed appropriate because it facilitates obtaining in-depth contextual knowledge about the phenomenon under investigation (Yin, 2018). As Gerring (2017) suggests, case studies enable researchers to delve deeper into a subject to extract detailed insights. Given these considerations, a case study design was considered appropriate.

The data were obtained from two sources: news media and interviews. The news media data were obtained from Daily Graphic and The Ghanaian Times, two major news outlets in Ghana. These news media sources publish six times a week, they are highly patronized, and they have an extensive coverage of socio-political issues in Ghana. The timeframe for collecting the news media was 2007–2019, focusing on articles that directly reported oil and gas issues. For instance, an article was included in the analysis if it reported on the economic benefits of oil and gas development.

In-depth interviews with key policy actors provided supplementary data for analysis. The interview participants include consultants,

academics, journalists, elected officials, and representatives of nonprofits. Interview participants were selected using purposive sampling, and the data were collected between June and September 2022. The sampling process involved generating a list of participants from the news media data along with targeted recruitment. This process yielded a sampling frame of fifty-five (55) participants. The actual fieldwork produced data from twenty-three (23) participants that were used for the analysis. All interviews were audio-recorded with the consent of the participants and transcribed verbatim for the analysis. Only one interview was recorded in a notebook. A semi-structured interview guide was designed to collect interview data, using the ACF's theoretical predictions on advocacy coalitions, policy core beliefs, and coalition strategies. The interview questions were designed and administered in the English Language via in-person meetings, on Zoom, or phone.

Five main concepts are foundational to the research questions under investigation namely, policy issues, policy actors, policy core beliefs, advocacy coalitions, and policy actors' strategies.

Policy issues: Policy issues were operationalized as the topics that policy actors discuss within the context of oil and gas governance debates. These issues were extracted from news media articles by following these steps. First, the title of the news article was identified. An example is "Oil-drilling starts Sunday to pave way for commercial production." In the second step, the article's focus was used as a proxy for the policy issue. In the example provided, "oil production" is considered as the article's policy topic. Thus, a policy issue was measured as the substantive topic embedded in an article's title.

Overall, five policy issues were identified; these were categorized by assigning a code between 1 and 5. Specifically, code 1 was assigned to issues under production, exploration, and investment and infrastructure (PEII). Code 2 was assigned to issues under management, economy, revenue, transparency, and accountability (MERTA). Code 3 was assigned to issues of policy, local content, and capacity building (PLC). The issues classified under risk, environment, and safety (RES) were assigned code 4. The issues assigned code 5 were clustered under regulation, enforcement, and contracts (REC). The interview data provided supplementary information on key policy issues present in the subsystem, based on insights from participants' role and policy preferences.

Policy actors: Policy actors refer to individuals or organizations who actively participate in oil and gas policy debates. Active participation is

when a policy actor publicly expresses their policy preference(s) on oil and gas governance. Once a policy actor was identified in a news media article, several attributes were coded such as organizational affiliation (e.g., Ministry of Energy) and organizational type (e.g., non-governmental organization). Interview participants also provided additional information on key policy actors. These participants expressed their policy preferences for oil and gas, and they had diverse backgrounds.

Policy core beliefs: Policy core beliefs have normative and empirical aspects. Normatively, they refer to policy actors' value priorities within a subsystem. Empirically, they reflect problem seriousness, fundamental causes of a problem, and preferred solutions. Policy core beliefs are operationalized as policy actors' position about oil and gas development. These beliefs were reflected differently in various news media articles, such as "oil and gas will boost Ghana's economy," and "oil and gas will help address Ghana's energy security demands." The policy core beliefs helped determine the line-up of advocacy coalitions. In the interview data, policy core beliefs were measured using the question "What are your policy preferences for oil and gas governance in Ghana?"

Advocacy coalitions: Advocacy coalitions refer to a cluster of policy actors who share similar policy core beliefs. Policy actors were clustered into coalitions based on shared policy core beliefs, indicating agreement; this was coded 1. Policy actors who differed in their policy core beliefs reflect disagreement, and it was coded -1. Policy actors who expressed no clear policy core belief were considered neutral and it was coded 0. All policy actors with a score of 1 were clustered into the pro-oil and gas coalition. Policy actors with a score of -1 were grouped into the anti-oil and gas coalition. Those with a score of 0 were non-aligned. The interview guide was also used to identify advocacy coalitions using the question "Which people/organizations do/did you collaborate with on oil and gas governance issues? Which people/organizations do/did you frequently disagree with on oil and gas governance issues?"

Policy actors' strategies: Because coalitions seek to influence public policy, they adopt different means to achieve their goals. Coalition strategies, therefore, can be conceived as actions that policy actors use to achieve their aim, such as inducing policy change. Conceptually, the list of coalition strategies is inexhaustive, but empirical research by Sabatier (1988), Pierce (2016), Crow (2008), and Nohrstedt (2011) document several strategies. The main strategies identified in the news media articles include public meetings, communication with news media, lobbying or

influencing the executives, project commissioning, and research dissemination. To assess coalition strategies, the interview participants were asked: *Can you describe the activities people/groups used to influence oil and gas governance?*

Two techniques were used to analyze the news media and interview data: descriptive network analysis and content analysis. Network analysis is a technique used to assess the relationships and interactions between people, organizations, or things (Yang et al., 2017). In this chapter, descriptive network analysis was used to identify coalitions from the news media data by grouping policy actors with shared policy beliefs. To illustrate, two policy actors were clustered into one coalition if they support transparency and accountability in oil and gas governance. The use of news media data and network analysis in analyzing coalitions is consistent with current trends in ACF scholarship (Gronow et al., 2020; Leifeld, 2013). Content analysis focused on coding the interview data to identify policy core beliefs, advocacy coalitions, and coalition strategies. In performing the analysis, the data were read iteratively, coded, and organized in Atlas.ti. Through this process, the data were structured using the logic of constant comparison method (Leech and Onwuegbuzie (2011) to reflect key ACF concepts relevant to the chapter. For instance, the sample interview data "...so we the CSOs actually developed a communique which we put out in the media in terms of the key demands" provided information on coalition strategies. By using different data sources for the analysis, this chapter leveraged the strengths of each data source, helping to provide a more comprehensive account of the evolution of the oil and gas policy subsystem in Ghana.

RESULTS

This chapter addressed two research questions about the evolution of the oil and gas policy subsystem in Ghana: (1) *What are the policy core beliefs of policy actors and what issues do they debate?* (2) *What strategies do policy actors use and what coalitions do they form?* The results are presented below.

Research question 1: What are the policy core beliefs of policy actors and what issues do they debate?

The ACF postulates that policy actors hold and express beliefs regarding the causes, effects, and solutions to policy problems. Several policy core beliefs associated with policy actors were identified. Overall, the policy core beliefs with the highest references (top five) are economy (96), local content/participation (62), policy/legal framework (50), capacity building (49), and transparency and accountability (35). Across organizational affiliations, policy actors affiliated with the National Government and Business organizations expressed the highest frequency of policy core beliefs. On the contrary, Industry Groups and Foreign Governments expressed the lowest frequencies of policy core beliefs. Moreover, among policy actors affiliated with the National Government, Economy (64), Local Content/Participation (39), and Policy/Legal Framework (35) received the highest frequencies.

For policy actors affiliated with Business organizations, Economy (17), Capacity Building (15), and Local Content/Participation (12) obtained the highest frequencies. One similarity between policy actors affiliated with the National Government and Business organizations was their shared emphasis on Economy and Local Content/Participation. The interview data provided further insights into actors' policy core beliefs based on the question: "What are your policy preferences for oil and gas governance in Ghana?" A respondent explained that "...the emphasis should be developing local capacity because tax revenue will always be there...I think that developing local capacity where we can actually make a lot of gain [is important] ..." (Interview, Academic, 7.22.22). Another interviewee explained that "the two most important things we wanted to achieve was to reduce the incentives or opportunity for corruption and also to encourage participation..." (Interview, Nonprofit, 8.1.22). In the view of a former Energy Minister "... [the government's] policy goal [was] to establish laws to ensure that we have efficient utilization of our resources" (Interview, Fmr. Energy Minister, 8.14.22). In short, different actors held and articulated various policy core beliefs about different aspects of oil and gas governance.

Five policy issue categories were identified in the news media data, which are presented in Fig. 1. The figure shows that the most dominant policy issues were production, exploration, investment, and infrastructure (PEII). The next dominant issues centered on management, economy, revenue, transparency, and accountability (MERTA). These were followed by issues pertaining to regulation, enforcement, and contracts (REC). Finally, the issues with the lowest frequency were risk, environment, and

safety (RES). An important observation from the news media data is significant variation across all policy issues. This means that the frequency of policy issues waxed and waned across time.

Further exploration of Fig. 1 suggests that the coverage of policy issues appears to follow a rise and fall logic. The first rise period occurred from 2007 to 2010, while the second rise period appeared from 2012 to 2014. In both periods, the frequency of coverage of policy issues increased. Conversely, the first fall period occurred between 2010 and 2011, while the second fall period occurred from 2014 to 2019. In these periods, the coverage of policy issues across all categories dropped. The policy issues identified in the news media data also permeated the interviews. For instance, a respondent from a nonprofit explained that “...I am still looking at how petroleum revenues are better used as a push [for] effective development...so we are more focused on looking at how petroleum exploration is consistent with environmental standards” (Interview, Nonprofit, 6.30.22). A government representative expressed the view that “...number one thing that we have to do is transparency and accountability in revenue” (Interview, Government, 7.7.22). Overall, five main categories of policy issues were identified in the subsystem, and the coverage of these issues varied across time.

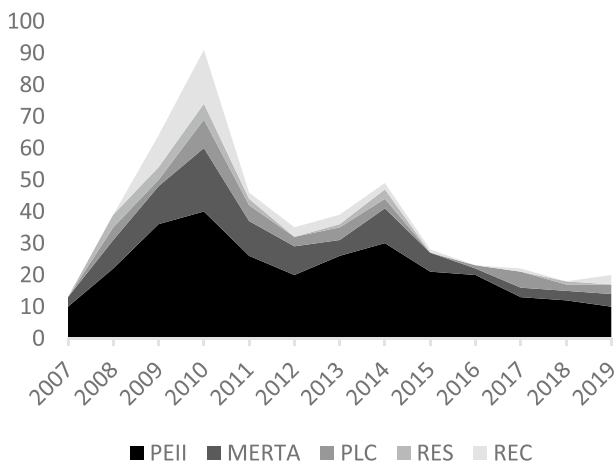


Fig. 1 Distribution of oil and gas policy issues in Ghana, 2007–2019 (*Source* Author’s construct)

Research Question 2: What strategies do policy actors use and what coalitions do they form?

Addressing this research question begins with the premise that policy actors adopt various strategies to translate their beliefs into public policy. For some scholars (e.g., Jenkins-Smith et al., 2018), policy actors' strategies reflect their instrumental characteristics, suggesting that they tend to act with a degree of rationality by taking actions that are consistent with their policy preferences. The findings are presented in Fig. 2:

The policy actors used four main strategies with varying frequencies. Overall, participation in meetings was a dominant strategy among the following policy actors: the National Government (126), Business organizations (52), and University/Research Institutions (16). Communication with news media is another important strategy, with the following distribution: National Government (67), Business Organizations (25), and Industry Groups (6). Unlike other strategies like participation in public meetings and communication with news media that are associated with diverse policy actors, project commissioning and research dissemination

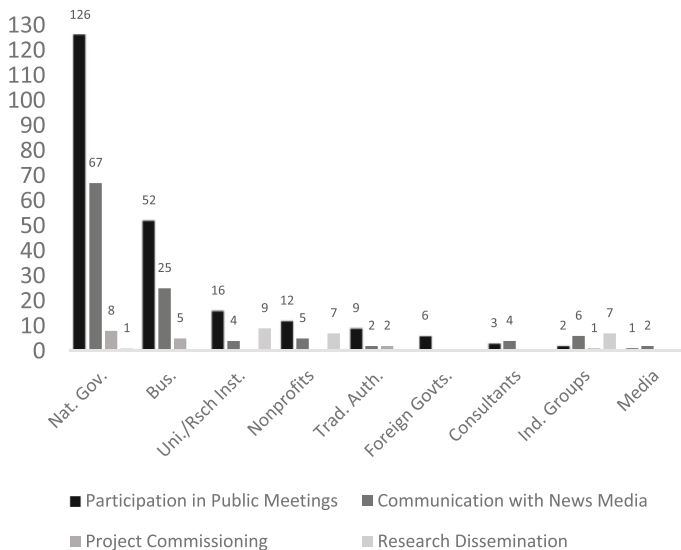


Fig. 2 Policy actors' strategies (*Source* Author's construct)

seem restricted to a few policy actors. In the case of the former, the National Government (8) and Business organizations (5) are the main actors that used this strategy. One potential reason is that this strategy involves visiting project sites and inaugurating completed projects, which might fit well into the activities of these policy actors. Likewise, University/Research Institutions (9), Nonprofits (7), and Industry Groups (9) frequently used the research dissemination strategy.

Insights from the interview data support findings from the news media data. A respondent from the nonprofit sector explained that “We did citizens engagement to educate people about the [policy]...and we used to go to schools and teach students about the oil and gas industry” (Interview, Nonprofit, 7.15.22). A participant from the national oil and gas company described their strategy as comprising “Publications, radio presentations, social media petitions and all those things” (Interview, National Oil and Gas company, 7.13.22). Finally, a media representative identified conference participation and discussion as the main strategy for engaging in the policy process (Interview, Media, 7.15.22). Overall, both the news media and interview data demonstrate that the policy actors used various strategies to achieve their policy goals. Moreover, different strategies were adopted at different points in time. In short, the findings portray a diversity of strategies that policy actors used in oil and gas policy process.

Using descriptive network analysis, two main coalitions were identified: a dominant pro-oil and gas coalition, and a weak anti-oil and gas coalition. A third non-aligned group ($n = 9$) was identified but not reported. For each coalition structure, the node size represents the number of policy actors in each category. The pro and anti coalitions are presented in Fig. 3.

The coalition graphs present several insights. First, the size of the pro-oil and gas coalition suggests a dominant coalition. In this coalition, the policy actors with the highest number of participants are affiliated with the National Government (56), followed by Business organizations (44). Traditional Authority (11) and University/Research Institutions (11) have the same number of policy actors. The organizational affiliation of policy actors in the anti-oil and gas coalition shows five main categories, with the main actors being the National Government (2), and Industry Groups (2).

In the pro-oil and gas coalition, some of the key participants from the National Government include elected officials and bureaucrats. Among the Business organizations, the key policy actors are foreign oil and

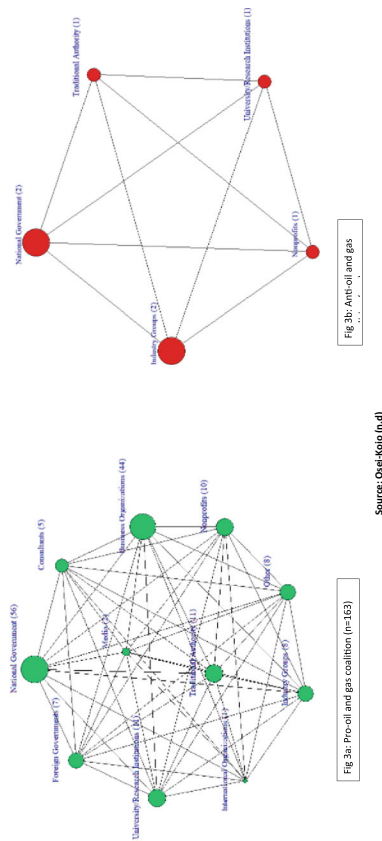


Fig. 3 a Pro-oil and gas coalition ($n = 163$) b Anti-oil and gas coalition ($n = 7$) (Source Osei-Kojo, 2025)

gas companies, such as Tullow Oil, Kosmos Energy, and ExxonMobil. Examples of policy actors affiliated with University/Research Institutions include the University of Ghana, and the Institute for Statistical, Social, and Economic Research (ISSER).

DISCUSSION AND CONCLUSION

This chapter explored the evolution of oil and gas policy subsystem in Ghana, using a case study design along with news media and interview data. After collecting news media data spanning 2007 and 2019 from two sources (Daily Graphic and The Ghanaian Times), interview data were obtained from 23 active participants with diverse backgrounds for analysis. These data were analyzed using descriptive network analysis and content analysis. The chapter operationalized and measured concepts that are deemed pertinent to understanding a policy subsystem: policy issues, policy actors' beliefs, policy actors' strategies, and advocacy coalitions.

The chapter addressed two main research questions: (1) *What are the policy core beliefs of policy actors and what issues do they debate?* (2) *What strategies do policy actors use and what coalitions do they form?*

For research question one, the policy core beliefs identified include economy, capacity building, local content and participation, and transparency and accountability. As has been established in prior ACF research, policy core beliefs enable diverse actors to form coalitions with the goal of influencing public policy (Jenkins-Smith et al., 2018; Weible et al., 2020). The chapter identified five policy issues prevalent in the subsystem. These issues were categorized into PEII (production, exploration, investment, and infrastructure), MERTA (management, economy, revenue, transparency, and accountability), REC (regulation, enforcement, and contracts), and RES (risk, environment, and safety) issues.

For research question two, the strategies identified include participating in public meetings, research dissemination, communication with news media, and project commissioning. Because the ACF takes a conflicting view of the policy process, policy actors adopt a range of strategies as tools to translate their policy core beliefs into policy outcomes (Crow, 2008; Pierce, 2016). Furthermore, a dominant pro-oil and gas coalition and a weak anti-oil and gas coalition were identified. Indeed, several ACF research found dominant coalitions in diverse policy subsystems (e.g., Beverwijk et al., 2008; Li & Wong, 2020; Olofsson et al., 2018; Sommerville et al., 2022; Yun, 2019).

This chapter provides several contributions to ACF research. First, by tracing the evolution of a policy subsystem, this chapter takes an empirical approach to providing a rich and thick description of how the ACF's main unit of analysis evolved in Ghana's context. The key point here is that while the policy subsystem remains the primary unit of analysis for ACF research, there is limited attempt, if any, to empirically and explicitly examine how a policy subsystem develops over time. Rather, most analysts are implicit about its existence and then move on to conduct their research. The consequences of such an approach are not clear, but if one considers such evaluations as first-order analyses, then the results can be leveraged for second-order analyses. For example, by identifying the slew of policy issues that persist within a policy subsystem, one could go a step further to analyze how such issues, if at all, shape actors' policy core beliefs within a subsystem.

The second contribution hinges on policy actors' strategies. The key insight is that policy actors adopt different strategies to influence public policy, and that these strategies change over time. Past research (e.g., Pierce, 2016; Osei-Kojo, 2023) identifies coalition strategies, but this chapter's contribution is that coalition strategies change over time. Thus, coalitions are prone to revising their approach to influencing public policy as the policy landscape evolves. This finding seems consistent with the ACF's view that public policy is inherently about conflict. This view draws on Schattschneider's (1960) concept of expanding the scope of conflict, where coalitions adapt their strategies to broaden their membership in order to achieve their goals. The findings in previous research are consistent with those in this chapter: research and publication, lobbying, and participating in public meetings. One less well-known strategy is project commissioning, where policy actors announce a public infrastructure project. At such events, policy actors were found using the occasion to tout their "good works" and leverage the moment to garner additional support toward influencing existing or future policy outcomes. The observation of this strategy, thus, expands our existing understanding of policy actors' strategies. The chapter's case study design limits extending this finding to other policy subsystem contexts. Therefore, future analysts are encouraged to explore this and other related strategies to gather more evidence to expand our horizon of the strategies that policy actors use to achieve their policy goals.

The third contribution relates to the coalition structure. The finding of a dominant pro-oil and gas coalitions aligns with previous ACF applications in developing countries (Li & Wong, 2020; Olofsson et al., 2018; Sommerville et al., 2022; Yun, 2019). In these and other studies, the key message was that the single dominant coalition was at the center of influencing policy outcomes by exploiting ACF's theoretical pathways to policy change. Consistent with past work, the presence of a dominant coalition may have implications for participation in oil and gas policy debates. In simple terms, we can speculate that policy actors who do not belong to the dominant coalition may have limited voice or opportunities to meaningfully participate in policy debates. This is a topic that future ACF research in Ghana's oil and gas governance can explore to enhance our understanding of how groups with fewer people may influence public policy.

Finally, methodologically, this chapter is one of the rare studies that combine descriptive network analysis and content analysis to empirically explore the evolution of a policy subsystem. On one hand, this approach strengthens the growing application of network analysis via news media data in ACF scholarship (Nam et al., 2022; Osei-Kojo, 2023). On the other hand, the use of content analysis via interview data provides a means to triangulate the findings and provides an additional layer of strength to the findings of the chapter. Still, there is room for improvement through testing the concepts that were operationalized in the chapter in other contexts to gather additional knowledge about how policy subsystems develop. It is only by doing so that we can better understand the nuances of ACF's primary unit of analysis: the policy subsystem.

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Advocacy Coalition Framework—Advancing Scholarship in the Textbook and Beyond

Christopher M. Weible and Hank C. Jenkins-Smith

INTRODUCTION

In 1993, Paul Sabatier and Hank Jenkins-Smith edited a seminal volume on the Advocacy Coalition Framework (ACF), which offered one of the first comprehensive articulations of the Framework. This volume included a collection of applied studies, critical assessments, and revisions that laid the foundation for what would become one of the most influential theories in the study of policy processes. The volume tailored the characterization and applications of the Framework chiefly to mature, adversarial policy subsystems within advanced polyarchies. Within this scope, applications accumulated and came to represent the “textbook version” of the ACF.

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More than 30 years later, this new volume presents five chapters that continue to advance knowledge within the established scope of the textbook ACF. These empirical studies begin with Gronow et al., who utilized two waves of surveys among policy actors in an adversarial Finnish climate change policy subsystem. Their research reveals a broad pattern of coalition stability despite shifts in the importance of various belief components, demonstrating that coalitions persist even as beliefs and priorities evolve. On the other hand, Pfeifer et al. challenge the generalizability of the ACF's belief homophily hypothesis. Their study, based on a survey of specialized professionals in a U.S. county-level environmental risk policy subsystem, found that coordination often occurs with people outside of a coalition rather than just with people in a coalition. The decision to coordinate outside a coalition is influenced by the risks associated with different types of coordination.

These chapters underscore the strength of the ACF's theoretical framework and methodological tools in identifying coalitions. However, they also raise important questions regarding conceptualization and measurement, particularly concerning the definition of stability and the extent to which ACF hypotheses can be generalized across different contexts, such as among risk professionals.

Focusing directly on policy change, Fullerton et al. investigate the ACF's pathways for policy change—learning, internal events, external events, and negotiated agreements—by analyzing 77 policy changes related to oil and gas development in Colorado from 2007 to 2021. Their findings partially support the ACF's first policy change hypothesis, showing that internal events occur more frequently as catalysts for change compared to other pathways. Heinmiller shifts the focus to the second policy change hypothesis, delving into what it means for a coalition to be "in power" and how shifts in power influence policy outcomes. By examining six discrete policy changes in Canada from 1995 to 2018, he finds that at least five of these changes support the idea that major policy shifts occur following a change in the ruling coalition in national-level debates. Lastly, Gupta et al. explore coalition opportunity structures to explain 117 policy decisions across 38 U.S. states from 1960 to 2007. Their research confirms that open policy subsystems are more likely to result in policy change than closed ones.

These three chapters underscore the validity of the ACF's policy change theory, demonstrating that the Framework provides a robust

foundation for understanding and studying policy change through its well-defined hypotheses.

As described in Chapter 1 of this volume, the five chapters highlighted in the preceding paragraphs nestle within the ACF's textbook version. However, much of the scholarship included in this book extends beyond the textbook ACF. Giordono, for example, relied on interviews and documents to examine coalitions in low-salience subsystems focused on providing services for individuals with Intellectual and Developmental Disability (I/DD) in the United States. The study is unique in operating along a jurisdictional scale; that is, she describes the interactions between coalitions at the national and state levels. She finds variation in the degree of subsystem type, from collaborative to adversarial, and that coalition resources at the subnational level affect the strategies national subsystem actors use to seek resources and deploy influence.

In their study of antimicrobial resistance, hydraulic fracturing, and food waste in Switzerland, Ingold et al. used survey data to explore belief systems and coordination on a different level of subsystem development, that is, those at a nascent instead of a mature stage. They find that many of the textbook ACF arguments are refuted, namely, when the subsystem is nascent, the actors do not have coherent belief systems and nor do they express consistency between policy core and secondary beliefs. Their data also show that within these nascent subsystems, coordination is driven just as much by secondary as policy core beliefs, and actors engage in cross-coalition coordination as frequently as within-coalition coordination.

Whereas most ACF textbook studies focus on the meso level, interactions within and between actors in advocacy coalitions, Yordy shifts the level of policy actor aggregation down to the micro level to explore the intricacies of policy actors' belief systems in two municipal housing policy subsystems in Colorado. In doing so, she finds that democracy-oriented beliefs fold into the ACF's belief system, paving the way for new research opportunities for ACF scholarship.

Osei-Kojo's study of an oil and gas policy subsystem in Ghana also diverges from the textbook ACF. He finds unevenly distributed resources, as reflected in dominant and minority coalitions. Osei-Kojo also studied an African policy subsystem rather than one in North America or Western Europe. One of the key insights from Osei-Kojo's research is that the evolution of a policy subsystem from nascent to mature (like Ingold et al.)

can occur without the institutional infrastructure found in many Western Democracies.

In a study of the evolution of a gender-based violence subsystem in the United States, Wiley et al.'s chapter diverges from the textbook by examining the fall of a dominant advocacy coalition and the rise of a rival coalition, thereby analyzing a shift from uneven to even resource distribution levels as the subsystem shifts from unitary to adversarial. The impetus for the shift was, in part, mobilization of perceived threats by policy entrepreneurs to form an opposing coalition. This chapter also practiced a form of engaged scholarship where the lead researcher was involved in the issue rather than acting as a detached outsider, as is the norm for textbook ACF scholarship.

Nowlin's chapter shifts attention to policy-oriented learning. His study operates outside the textbook in several ways, focusing on the general public's opinion rather than the perspectives of policy actors. His work examines policy-oriented learning as both changes and reinforcements of beliefs, operationalized as the central tendencies and uncertainty in the distributions of beliefs on U.S. climate change and nuclear energy issues. His conclusion emphasizes information environments and uncertainty in studying policy-oriented learning.

The eleven empirical chapters included in this volume—five within the ACF's textbook comfort zone and six outside—highlight the ACF's strength and flexibility in supporting rigorous scholarship on policy change, coalitions, and learning. They highlight the Framework's continuing capacity to support high-quality scholarship using varied data sources (e.g., surveys, interviews, and documents) and analyses (e.g., process tracing, multivariate models, and network analysis). Most importantly, the research described in the chapters is transparent enough for policy scholars to replicate, draw lessons, and challenge and question.

This volume also stands as a testament to the ACF's topical range, from more technical disputes such as oil and gas development or nuclear power facility siting to those with a stronger emphasis on morality and ethics, like gender-based violence or disability policy. Moreover, it demonstrates the ACF's broad regional applicability, with applications from Ghana to Canada. These arguments highlight the ongoing appeal of a Framework that has endured for more than 40 years and continues attracting new generations of scholars worldwide.

However, in some ways, this volume reinforces arguments already made. Empirical reviews have highlighted the ACF's relevance in diverse

contexts, from Africa (Osei-Kojo et al., 2022) to Asia countries (Jang et al., 2016; Li & Weible, 2021), and its applicability across various policy topics (Weible et al., 2009; Pierce et al., 2017). Moreover, Henry et al. (2022) provided a roadmap for applying the ACF and, in doing so, reinforced the ACF's culture and capability to support transparent, mixed-methods scholarship.

Rather than simply reaffirm the already known status of the ACF as a dynamic and robust policy process research program, this volume's primary contribution comes from an orientation to ACF scholarship that involves distinctions between textbook and non-textbook applications. This orientation raises a question: *What adjustments do scholars make when applying the ACF outside its textbook "comfort zone"? This chapter directly addresses this question with the following argument: The ACF has always simplified and structured the complexity of policy processes by implicitly situating subsystems and the broader system architecture on key conceptual scales and levels, wherein the placement of the textbook ACF is just one possible (albeit very useful) configuration among many. When researchers apply the ACF outside the textbook context, they consciously or unconsciously adjust these levels or operate on entirely different scales and levels.*

Moving forward, critical tasks of ACF scholars will be to make these scales and levels explicit, recognize the configurations that apply to any given research project, engage in cross-scale and cross-level research, and focus inquiry into which scales and levels are most crucial in advancing knowledge about policy processes and contributing to a better world. In the next section of this chapter, we revisit the origins of the textbook ACF to clarify how the early framing of the textbook version has served—and in some cases inhibited—policy scholarship. We discuss some of the externality implications of the research program's reliance on the textbook and briefly introduce the meaning of scales and levels. The chapter concludes with a summary of the essential scales and levels for the ACF and a research agenda for deliberate within and cross-scale and level research to advance knowledge about policy change, learning, and coalitions.

ORIGINS OF THE TEXTBOOK ACF

The building blocks of any theoretical framework are concepts designed by researchers to highlight specific aspects of the policy process while deemphasizing others, allowing these elements to be interrelated through hypotheses. Unlike general or grand theories, such as Easton's (1965)

Systems Theory, the ACF is a middle-range theory, which requires contextualization in the formulation of its hypotheses. One of the early challenges faced by Sabatier and Jenkins-Smith was determining the specific “textbook” context to which the ACF’s hypotheses were meant to apply. This context was not fully defined from the outset but instead took shape gradually over time. Although the initial version of the ACF appeared in the mid-1980s (e.g., Sabatier & Hanf, 1985), the framework’s fully articulated “textbook” form was first presented in Sabatier and Jenkins-Smith (1999).

Only one textbook condition was clearly and consistently present from the beginning—the stipulation that the policy subsystems of interest would be situated within advanced polyarchies (Dahl, 1971; e.g., Sabatier & Hanf, 1985, pp. 308–309; Sabatier, 1987, pp. 654). While Dahl (1971) lays out a lengthy description of advanced polyarchy, the relevant characteristics for the operation of the ACF are the opportunity for contestation of ideas and preferences (i.e., an opposition) and inclusive participation (i.e., enabling contestation by a wide range of actors across issue areas). Together, these conditions provided the essential opportunity structures for two or more coalitions to form and, under favorable conditions, to maintain themselves over time.

A more ambiguous stipulation involved whether the typical subsystem would feature two or more competitive coalitions, later termed adversarial subsystems, versus a single dominant coalition, later termed unitary subsystems (Weible, 2008). In the early formulations of the ACF, Sabatier argued at times that a single dominant advocacy coalition would most likely come to control a policy subsystem (Sabatier, 1987, pp. 670; 1988, pp. 148). This argument followed Wamsley (1985), who claimed that subsystems required some stability and direction in their government programs, which was most likely to occur after one dominant coalition took control. A disproportionate share of the benefits from the institutional arrangements would then accrue to this dominant advocacy coalition, which would subsequently commit resources to sustaining the status quo. Despite these arguments, the earliest writings also described the textbook ACF via adversarial policy subsystems, most evident, for example, in the original coalition hypotheses and the flow diagram. Sabatier and Jenkins-Smith (1993, 1999) resolved this ambiguity by removing discussions of dominant coalitions as the norm. Contrary to

Wamsley (1985), their reasons were evidential—two competitive coalitions could coexist while maintaining an effective policy subsystem over time (see Jenkins-Smith et al., 1991).¹

Sabatier and Jenkins-Smith's early work did delve into the importance of a policy subsystem's stage of development—that is, the general ideas underlying the distinction between mature and nascent subsystems. However, while Sabatier and Hanf (1985) described subsystem development from early to late stages and Sabatier and Brasher (1993) analyzed the evolution of a policy subsystem, the concept of a nascent subsystem was not explicitly articulated until Sabatier and Jenkins-Smith (1999, pp. 129). Over the course of the conceptual development of the ACF, this awareness of the variation in levels of subsystem development emerged from years of empirical research and a growing appreciation of its importance for the ACF's textbook hypotheses to function.

To summarize, the emergence of the textbook ACF began with an initial logical argument for situating subsystem dynamics within an advanced polyarchy, followed by learning that a dominant coalition within subsystems is not inevitable, and that the distinction between mature rather than nascent subsystems is critical for expectations about coalitions and subsystem dynamics. In all, this took about 15 years. Once published in Sabatier and Jenkins-Smith (1999), this characterization of the textbook ACF was by-in-large taken as an implicit given among ACF scholars for a quarter century.

EXTERNALITY IMPLICATIONS WITH THE TEXTBOOK ACF

While the test of time has shown the textbook ACF to be valuable, its proliferation has come at the cost of several externality implications.

The ascendancy of the textbook ACF is evident in the series of chapters in the *Theories of the Policy Process* volumes (Sabatier & Jenkins-Smith, 1999; Sabatier & Weible, 2007; Jenkins-Smith et al., 2014; Jenkins-Smith et al., 2018; Nohrstedt et al., 2023). Each chapter organizes itself around the ACF's core textbook hypotheses and summarizes the research

¹ Notwithstanding, remnants of Wamsley's argument for a dominant coalition remain in the second policy change hypothesis that posits major policy change follows the displacement of the dominant coalition that established the policies programs in the first place.

supporting or refuting them. While almost all of these chapters recognize non-textbook applications and ideas, none give sufficient space for fostering theoretical growth outside the comfort zone of the textbook ACF. For example, some chapters discuss collaborative subsystems, but none of them seriously consider the related theoretical ideas about collaborative subsystem dynamics put forward by Koebele (2019). Similarly, these chapters mention nascent subsystems but have yet to advance any theoretical arguments about the characteristics of nascent subsystems or the transition from nascent to mature subsystems, such as those found in Ingold et al. (2017). The result is a *crowding-out externality* wherein the preoccupation with the textbook version of the ACF inadvertently kept potentially important theoretical ideas from becoming the central focus of ACF scholars.

Another type of externality problem is *shoehorning* research into the textbook. Shoehorning happens when research is inappropriately forced into the textbook despite not fitting there. For example, the textbook ACF is designed to operate at the level of the policy subsystem. However, some ACF research operates at the level of the decision-making venue rather than the broader policy subsystem. An illustrative case is Leach and Sabatier's (2005) study of watershed partnerships, which are small decision-making venues wherein policy subsystem actors participate, governed by explicit rules about membership and behavior. While coalitions can be found at this level of collective action (e.g., Calanni et al., 2015) and some venue-level analyses can infer subsystem insights (e.g., Zafonte & Sabatier, 2004), several under-appreciated challenges emerge when focusing specifically on venues. These include a tendency for venues to address single decisions, support short-term coalitions of convenience, feature low to intermediate levels of conflict intensity when accompanied by institutional arrangements mitigating conflict, and enforce rules that influence patterns of coordination and information exchange within and across coalitions—all of which may produce findings that contradict ACF textbook hypotheses.

Perhaps the biggest problem with shoehorning research into the textbook is the propensity to divert scholars' attention from the unique institutional rules of operation, norms, and incentive structures of one or more decision-making venues (as components of the ACF's "opportunity structures") and thereby undermine understanding of how these critical features are associated with the broader policy subsystems of which they are a part.

Finally, a third externality issue is *missed opportunities*, which occur in at least two ways. One is that people only imagine the ACF as applicable within the confines of the textbook comfort zone and, therefore, pass on the application of the framework in other contexts. Another is the failure to sufficiently motivate innovative research agendas involving cross-scale or cross-level interactions and comparisons. For example, what are the strategic interactions of subsystem coalitions and their allies participating in a decision-making venue? How does a subsystem transition from nascent to mature stages? Why does a unitary subsystem become an adversarial subsystem? Scholars, including those whose writing appears in this volume, have explored these questions before, yet in our view, their contributions need more recognition, organization, and centrality in ACF scholarship.

A BRIEF INTRODUCTION TO SCALES AND LEVELS

The analytical use of scales and levels has long been a part of the scientific study of complex systems (Gibson et al., 2000; Vervoort et al., 2012; Poteete, 2017). Scales refer to the structured dimensions isolated, highlighted, and extracted from multi-dimensional complex systems. Levels refer to units for making important distinctions for designing research, measurement, and analyses on any given scale.

Imagine the complexity of the policy process as a multi-dimensional space. A scale would be equivalent to slicing this space along one of its dimensions and pragmatically isolating that dimension for study. One such slice could be taken along a jurisdictional dimension. Local, subnational or provincial, national, and supranational are examples of levels that structure this jurisdictional scale. Giordono (Chap. 9) illustrates research interactions across a jurisdictional scale; her study analyzes coalitions operating at the national and subnational levels. Another slice could be a scale of policy actor aggregation. For example, the textbook ACF focuses on group interactions at the meso level on such a scale (e.g., Gronow et al., Chap. 2). However, Yordy (Chap. 8) focuses her analysis one level down at the micro level by studying individual policy actors and exploring the intricacies of their belief systems. These examples also highlight that any given research project is a configuration of scales and levels. For instance, Yordy (Chap. 8) is not only an analysis at the micro level on policy actor aggregation scale but also at the local level on a jurisdiction scale.

There are numerous (and perhaps uncountable numbers of) potential dimensions in any complex system. Accordingly, there are also an uncountable number of associated scales and levels for structuring those dimensions. No person, framework, or theory can identify and compile them all. The challenge for science is deciding what dimensions to analyze to advance understanding and what to put aside or ignore without losing too much detail. Another challenge is choosing which scales and levels among many are most appropriate for structuring a dimension. Similarly, some of the most useful scales and levels can be subdivided further into sub-scales and sub-levels.

To complicate matters further, the researchers' choice of a dimension and associated scales and levels is partly a construction of the complex system under study. This happens for dimensions leaning abstract (e.g., a scale of knowledge levels ranging from general/scientific to specific/local) and those leaning concrete (e.g., a spatial scale with levels from local landscapes to the global whole). The choice of dimensions, scales, and levels inevitably reflects the goals, understandings, and values of the researchers—the implications of which are nontrivial, from reinforcing the boundaries of any given science to exacerbating societal inequities. This is another reason for supporting a diversity of perspectives on a research team and recognizing the value of some reflexivity of the researcher concerning what and how something is being researched (Weible, 2023; Yordy, Chap. 8; Wiley et al., Chap. 11).

Finally, a particular configuration of scales and levels often becomes an integral part of the specialized scope of a theoretical framework or even an academic discipline or field program. On the one hand, this gives focus and, thereby, traction for understanding a phenomenon and building cumulative knowledge. On the other hand, such focus over time can also box in the research agenda or push out comparative cross-scale and cross-level research designs. The textbook ACF provides a clear example of the benefits and costs of focusing clearly on a specific configuration of dimensions and scales. Sabatier and Jenkins-Smith needed to narrow their research agenda to focus on mature adversarial policy subsystems in advanced polyarchies to create the ACF's textbook theoretical argument. After the accumulation of decades of research that extends beyond the textbook comfort zone, now the time is appropriate to explore cross-scale and cross-level opportunities more deliberately under the ACF.

For the ACF, the goal then should be to specify and make more explicit the critical dimensions for studying the policy process, articulate

the choice of scales and levels used to structure those dimensions, and make clear the criteria for their choice and construction while maintaining an openness to questioning these choices. The goal should never be to provide a preordained, comprehensive, complete, or “official” configuration of scales and levels—such a decision would be hegemonic, strangle the growth of knowledge, and impose one person or group of people’s views of importance. At the same time, the answer is not to abandon scholarly rigor and say any scale or level goes. Some scales have been empirically found to be essential; some need further study to ascertain whether they are critical; others might be essential only in combination with other scales and levels; and still others may be found superfluous or irrelevant and, therefore, be safely set aside.

ESSENTIAL SCALES AND LEVELS FOR ACF SCHOLARSHIP

This section outlines what we believe to be the six most consequential scales (with associated levels) that capture the critical underlying dimensions of the ACF textbook model and that provide the primary basis for understanding and advancing ACF research. For public policy scholars, identifying these scales allows for a clear understanding of where (and why) textbook ACF research and hypothesis testing is likely to be most directly applicable. At the same time, identifying these scales allows for clarifying the relationships among research that focuses within, on the boundaries, and outside of the ACF textbook comfort zone. This is of particular importance as the body of research focusing on cases that fall on the boundaries or outside the scales that define the textbook ACF—as exemplified by six of the chapters in this volume—continues to grow in size, theoretical importance, and practical significance.

For each of the following scales, which represent key underlying dimensions of the complex system that make up the policy process, we characterize the levels and the comfort zone for the ACF textbook cases. We also point to research (and potential research) that departs from the comfort zone and has advanced our understanding of the broader scope of the policy process.

Scale 1. Arenas of Collective Action

By definition, the policy process involves collective action (Olson, 1965; Ostrom, 2010), wherein some number of individuals or organizations

must work together to achieve shared objectives. This includes—but is not limited to—resolving undesirable conditions, safeguarding or protecting a livelihood or something of value, achieving and allocating a shared benefit, and ensuring desired societal outcomes through the administration, management, and implementation of public policies.

The arenas within which collective action takes place span three principal levels of collective action in policy processes: macro system, policy subsystems, and decision-making venues. The policy subsystem is mid-level on this scale. It is defined by a set of policies and programs on a particular theme, a geographic boundary, the available venues for making collective choice, and the set of specialized policy actors involved.

Moving up a level, we encounter the macro system, also known as the “macro-political system” or simply the “political system.” Unlike policy subsystems, macro systems are not confined to specific policy areas; they can address any conceivable policy problem or issue within a polity. Macro systems operate at a broad jurisdictional level, such as the provincial level (in federal systems), national, or supranational levels. They also have wide geographic reach, regularly spanning a country or countries, as seen in supranational organizations such as the European Union or encompassing constituent units within federal systems (e.g., cantons, states, and provinces).

While policy subsystems can operate at high-level jurisdictions, their narrower policy focus often—but not always—leads them to function at lower jurisdictional levels, including local ones. Similarly, although macro systems can cover the same broad geographic areas as policy subsystems, the latter can also operate at much smaller geographic boundaries, depending on their specific policy focus.

Moving down the level are decision-making venues, or what has been termed decision-making foras in the ACF (Jenkins-Smith, 1990). These include, but are not limited to, legislative proceedings, regulatory commissions, public hearings, courts, collaborative partnerships, and so on. For example, Leach and Sabatier (2005) focused on an informal collaborative partnership. The constellation of decision-making and discourse venues constitutes the coalition opportunity structure for advocacy coalitions.

The traditional comfort zone of the ACF has been in the middle of this scale at the level of policy subsystems. While research at the venue level has a relatively long tradition in the ACF (e.g., Leach & Sabatier, 2005; Koebele, 2019), research at the macro system level is only just emerging (Weible et al., 2025).

Scale 2. Democratization

The textbook ACF presupposes a degree of democratization, which can be understood along a scale ranging from low (authoritarian regimes) to high (advanced polyarchies) in terms of a government's responsiveness to citizens (Dahl, 1971). While citizen access and governmental responsiveness are key aspects of democratization, it encompasses a suite of institutional arrangements, including freedom to assemble, shape agendas, voting rights, and the conduct of free and fair elections.

In exploring the level of democratization within the ACF, different scales and levels of democratization can be considered, such as the distinction between consensual and majoritarian systems (e.g., Lijphart, 1977; Ingold et al., 2017). Additionally, the level of democratization can be applied across different levels of the arenas of collective action. For instance, Dahl (1971) recognized that the level of democratization at the macro system level might not extend to its sub-government units or from policy subsystems to specific decision-making venues. For example, Khayatzaheh-Mahani et al. (2017) provided empirical support for the ACF's textbook hypotheses in their study of shisha smoking in public places in Iran, a nation typically seen as an authoritarian regime, yet exhibiting a more adversarial policy subsystem within this specific issue domain.

Scale 3. Stage of Development

The stage of development scale references the evolution of collective action arenas, particularly from their initial emergence to maturation and, possibly, termination. Commonly studied in the ACF is the stage of development of policy subsystems, particularly nascent or mature, with the latter already referenced as contributing to the textbook ACF. Mature subsystems are essential partly because they allow policy actors sufficient time and iteration with allies and opponents to create and subsequently harden their belief systems and form relationships within advocacy coalitions. In contrast, a nascent subsystem is still emerging, possibly without the hardened belief systems among policy actors, along with the associated coalitions.

Examples from this volume that focus on nascent policy subsystems include Ingold et al. (Chap. 10) and Osei-Kojo (Chap. 12), with the other chapters dealing with mature subsystems. While this scale has mostly been

applied to policy subsystems, it could also readily apply to broader macro systems and narrower decision-making venues. Similarly, while people have studied nascent and mature subsystems, none, to our knowledge, have deliberately analyzed subsystem termination or collapse. Though scholarship on this dimension thus far has chiefly emphasized the stage of development of policy subsystems, equally important is the stage of development of one or more decision-making venues (i.e., the coalition opportunity structures) or macro systems.

One of the key opportunities in studying this scale is better understanding cross-level transitions. That is, when does a nascent subsystem become mature? Additionally, when might a mature subsystem transition (or collapse) back to a nascent one? For example, when might a subsystem be subsumed into a broader subsystem that encapsulates it and entangles it with a substantial number of new issues requiring a rethinking of beliefs (and restructuring of coalitions) among policy actors? Moreover, what could contribute to the termination of a mature policy subsystem or decision-making venue?

Scale 4. Intensity of Policy Conflict

The intensity of policy conflict is a critical scale in the ACF, ranging from high to intermediate to low conflict intensity. The textbook ACF assumes that policy core beliefs are in dispute; that is, there is a relatively high intensity of policy conflict. Because core beliefs are invoked, the conflict can be expected to persist. One characteristic of high-intensity policy conflict is the presence of sufficient threats from opponents to trigger the devil shift, thereby contributing to collective action and the formation of two or more competing advocacy coalitions, resulting in an adversarial policy subsystem. As the intensity of policy conflict moderates, the subsystem can shift along a continuum from adversarial, with competitive coalitions, to collaborative, with cooperative coalitions. For example, Giordono (Chap. 9) analyzes coercive versus cooperative strategies to influence policy in subsystems with collaborative and adversarial tendencies. One of the challenges for the ACF is conceptualizing and measuring distinctions between the levels on this scale (see one approach in Weible & Heikkilä, 2017).

Scale 5. Resource Distribution

A resource distribution scale seeks to capture the dimension of political influence. For example, coalition success depends on strategically using resources to achieve policy-specific goals or acquire more resources. A typology of resources includes, but should not be limited to, access to authority to make decisions, favorable public opinion, information, mobilizable citizens or followers, financial resources, and skillful leadership (Sabatier & Weible, 2007; pp. 201). The textbook ACF assumes that a subsystem would feature two competitive coalitions, meaning their access and ability to utilize resources is more or less evenly distributed. However, when those resources shift from even to uneven levels, the relationship between the coalitions changes. What emerges is a dominant coalition within a subordinate or minority coalition or no opposition at all, also called a unitary subsystem. For example, Osei-Kojo's chapter (Chap. 12) finds the emergence of a dominant pro-oil and gas coalition in Ghana that controls the country's narrative and decisions on the policy issue. His analysis finds an opposition that contributes a small share to public discussions and has minimal influence on public policies. Similarly, Wiley et al. (Chap. 11) examined a once dominant coalition against gender-based violence in the United States that lost power, succumbing to a growing opposition that eventually resulted in two competitive advocacy coalitions for and against policies regarding gender-based violence. While the ACF offers a typology of resources to operationalize and measure this scale, there are other ways to operationalize the measurement of the distribution of resources.

Scale 6. Policy Actor Aggregation

The network of policy actors within policy subsystems can be quite diverse—including individual citizens, representatives of NGOs, experts, reporters from various media, elected representatives, leaders of trade groups, CEOs from individual firms, and many others (Heclo, 1978). One of the key challenges of the textbook ACF was to make sense of this welter of actors, which was accomplished through aggregation into advocacy coalitions.

In principle, there are three key levels of policy actor aggregation in policy processes: macro, meso, and micro. Following Heclo (1978), the textbook ACF operates at the meso level by focusing on the strategic

interactions of people and groups across venues that are of relevance to the aims of advocacy coalitions. The micro level shifts the focus to single entities, typically individuals or organizations, and potentially to the actions of actors within single venues. For individuals, micro-level studies might focus on individual perceptions, understanding, and behaviors. At the other end of the scale, the macro level moves the focus to the overall unit of collective action. As with meso-scale advocacy coalition, the macro-scale approach simplifies a complex array of actors and interactions by treating them as a whole. Most commonly, the macro scale is used for characterizing the behavior and dynamics of nation states, military alliances (e.g., NATO), or multilateral institutions (like the United Nations). Macro-level studies may examine the overall structure, configuration of constitutional-level rules and norms, and other attributes that lead the aggregated entity to “behave” as it does in efforts to shape public policy.

Decisions about the level of policy actor aggregation vary significantly across ACF studies. For example, Gronow et al. (Chap. 2) approached their study of coalitions in the Finnish climate change subsystem at the meso level by focusing on the interactions and beliefs within and among coalitions. This is well within the norm for textbook ACF studies. In contrast, Yordy (Chap. 8) conducted her research at the micro level, analyzing single people and their democratic beliefs. Nowlin (Chap. 7) takes a different approach, focusing on the macro level but addressing belief system changes within specific policy issue domains (climate and nuclear energy) of the U.S. population over time.

Scale 6 of policy actor aggregation should not be confused with the arenas of collective action in scale 1. Scale 1 refers to where the study of collective action takes place. This can encompass specific venues, policy subsystems, or the broader macro system. Scale 6, on the other hand, represents the level of aggregation for studying policy actors in any given arena of collective action. For example, a scholar can undertake a micro-level study within a venue, a subsystem, or a macro system. Likewise, a researcher can conduct a meso-level study of the strategic interactions among people or organizations in any of these arenas of collective action. Finally, a person can also conduct a macro-level study at any of the three levels of collective action, essentially studying the attributes of the level of collective action as a whole.

Figure 1 shows the six scales (vertical black lines) and the levels on which the textbook ACF operates (horizontal or slanting gray line). As

a visualization, Fig. 1 highlights what it means to operate “outside” the textbook ACF comfort zone. For example, Ingold et al. (Chap. 10) shifts the stage of development to the nascent level while studying policy subsystems as their arena of collective action in an advanced polyarchy, in high intensities of conflict, and with even distribution of resources at the meso level of analysis).

We emphasize that Fig. 1 does not provide a comprehensive or definitive list of theoretically and empirically relevant scales and levels. Indeed, the number of possible conceptual dimensions of the policy process is limitless, bounded only by the creativity of the observer. A sampling of other scales worth exploring, but not developed here, include (see, e.g., Cash et al., 2006):

- (1) Time: Daily, weekly, monthly, yearly, decadal;
- (2) Space: Local to global;
- (3) Jurisdictional: Local, subnational, national, supranational;
- (4) Persistence of problem recognition: Ephemeral versus enduring;
- (5) Stability of the ACF’s “relatively stable” parameters: Stable to unstable (leading to inchoate policy subsystems);
- (6) Cultures: Individualism to collectivism, Eastern vs. Western;
- (7) Policy topic: Environmental, social welfare, criminology, economic, etc.;
- (8) Knowledge: Local to general;
- (9) Analytical tractability: Low to high;
- (10) Community status: Marginalized to mainstream;
- (11) Community diversity: Heterogeneous to homogeneous.

For purposes of this discussion, we focus on the scales shown in Fig. 1 to provide what may be an artificially crisp set of scales and levels to enable research that approaches and extends beyond the textbook comfort zone of the ACF. However, the researcher can choose additional dimensions, scales, and levels; others will emerge from empirical research.

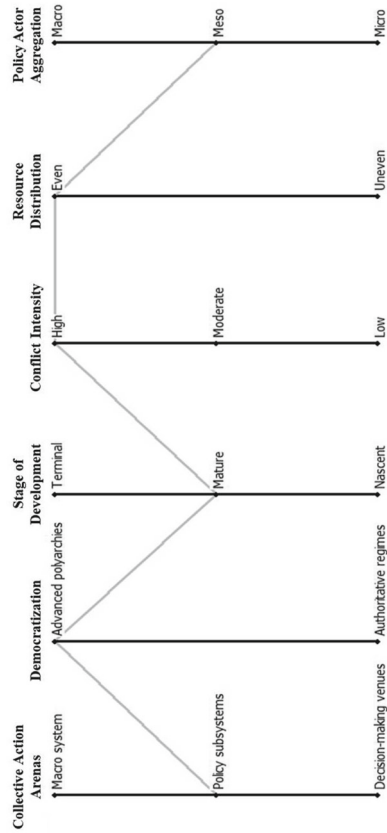


Fig. 1 Six essential scales and specified levels defining the textbook ACF. *Note* The six black vertical lines indicate scales with levels. The light gray line represents the specified levels defining the textbook ACF

CONCLUSION

In the natural sciences, such as biology, a model organism (e.g., the fruit fly) is frequently studied to develop better theories and frameworks for understanding more complex biological processes, ranging from genetics to diseases (Ankeny & Leonelli, 2020). The social sciences have their equivalence. Among policy process theories, one exemplary example is the study of localized common pool resource settings, which were instrumental in developing a better theory of collective action and sustainable institutional arrangements under the Institutional Analysis and Development (IAD) Framework (Ostrom, 1990). For the IAD Framework, a common strategy has been to extend its Common Pool Resource Theory beyond localized common pool resources, either through new approaches for studying broader ecological systems (Ostrom, 2009) or different types of goods (Bushouse et al., 2016).

The model organism for the ACF has been its textbook setting of mature, adversarial policy subsystems in advanced polyarchies for gaining traction in understanding collective action dynamics regarding coalitions, learning, and policy change in the broader political and policy processes. Like other research programs, this model organism of the ACF has proven its worth with decades of research, the confirmation of hypotheses, the development of better methods of data collection and analysis, and the prompting of novel research agendas outside its textbook.

However, drawing comparisons to the natural sciences has its limitations. The fruit fly is, after all, a single species, whereas the dimensions constituting the textbook ACF have been identified and structured by researchers to give theoretical and empirical leverage for advancing knowledge about public policy processes. In other words, scholarship in the ACF textbook context requires far more simplifying assumptions, always with a degree of reflexivity on the part of the researcher. This concluding chapter advocates for a strategy that encourages more deliberate theoretical and empirical research both within and beyond the textbook ACF. This strategy requires a more detailed description of the textbook, done here through a specification of its essential scales and levels.

A scale and level orientation offers several implications for future ACF research. First, research within the ACF textbook remains crucial, particularly for developing better methods and refining its theories. Second, research conducted at different levels on the same scales as the textbook

provides an opportunity for comparisons, allowing for testing the generalizability of textbook hypotheses and further theoretical development. One of the next steps for ACF scholars is to articulate better the boundaries of the ACF's textbook argument across different scales and levels.

Third, the ACF is fundamentally a theory of dynamics and transitions: people learn, policies change, resources are redistributed, and strategic interactions evolve among coalition members. Sometimes, these changes occur without significantly altering the context, essentially maintaining a particular equilibrium of situations and behaviors (Easton, 1965). However, other changes may indicate a shift to a new equilibrium. These are cross-level and cross-scale transitions (e.g., from nascent to mature stage of development, from uneven to even distribution of resources, etc.). To date, the drivers of these transitions have been theoretically and empirically under-studied.

Fourth, there are opportunities for advancing the ACF along scales and levels that are scarcely mentioned in this closing chapter or its current literature. For instance, beyond the essential scales and levels of the ACF's textbook, this chapter points to an additional list of scales and possible levels that could be examined statically or dynamically through cross-scale or cross-level transitions or interactions. Undoubtedly, there are more—identifying and specifying these additional scales and levels and investigating which of them are of theoretical and empirical import will be a task for the research community.

In all, this volume compiles eleven ACF applications, each of which could stand independently in terms of quality and original insights. As a collection, the chapters were used to analyze both textbook and non-textbook applications of the ACF through a specification of scales and levels. Such specifications of scales and levels are not definitive; they represent simplifications of complex systems where no simplification is ever absolute. This does not imply that all simplifications of the ACF's textbook or non-textbook contexts offer equivalent value in advancing localized and generalized knowledge. Some provide a stronger foundation for thoughtful discussions and debates, the development of better conceptual measures and methods of analysis, and the generation of new and intriguing questions. All of these begin with a careful articulation of the research context to which a theory applies and the necessary adjustments when extending beyond such a context. Ultimately, this dedication to transparency in research lies at the heart of the ACF, echoing one of its founding principles: "Clarity begets clarity, much begets mush."

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