Using the Advocacy Coalition Framework to Understand Collaborative Policy Processes

Elizabeth Koebele (elizabeth.koebele@colorado.edu)

Abstract: The Advocacy Coalition Framework (ACF) is a robust theoretical framework for analyzing policy processes that tackle "wicked" problems. Traditionally, ACF scholars examine how coalitions of actors with shared beliefs utilize strategies and resources to create policy changes that align with their goals. More recently, scholars have noted that collaboration between coalitions may also lead to policy change through negotiated agreements. As policy processes increasingly demand collaboration among actors—particularly in the environmental sector where policies address the sharing of finite resources and require a range of technical and disciplinary knowledge—this path to policy change will become more common. Studies have begun to examine ACF variables and hypotheses in the context of collaborative policy processes; yet, a holistic investigation into how the ACF can be used to analyze such processes and the changes they produce is lacking. Working from data collected in 28 interviews with participants in a collaborative water governance process, this paper theorizes how the ACF may be adapted to better analyze collaborative policy processes, culminating in a set of testable hypotheses related to coalition dynamics, policy-oriented learning, and policy change. The theoretical elaboration presented in this paper can lead to both improved studies of modern policy processes and more valuable suggestions for how we can capitalize on collaboration as an opportunity to avert political crisis.

Key words: Advocacy Coalition Framework, collaborative governance, comparative public policy, water policy, coalition dynamics, policy-oriented learning, policy change

Prepared for the 2016 Western Political Science Association Conference
San Diego, California
March 24-26, 2016

Introduction

In response to the complexity inherent in managing modern environmental problems, such as the need for a broader scientific knowledge base and the integration of a wider diversity of stakeholder values, environmental governance processes across scales and geographical areas have generally shifted towards more collaborative approaches (Sabatier et al., 2005a, Gerlak, Heikkila, and Lubell, 2012; Benson, Jordan, & Smith, 2013; Koontz & Newig, 2014, Margerum and Robinson, 2015). Ideally, such collaborative approaches can foster trust and knowledge-sharing among participants, thereby leading to the creation of more informed management actions that are easier to implement and that ultimately produce beneficial outcomes in the physical environment (Sabatier et al., 2005a). Scholars in an array of disciplines that focus on the intersections of public policy, management, and the environment seek to understand the procedural and environmental benefits and drawbacks of collaborative environmental governance processes, especially in comparison to alternate governance regimes. In order to do this rigorously, however, such scholars need appropriate tools to situate studies of collaborative processes within the broader policy process literature.

While a number of useful and increasingly sophisticated frameworks have been developed to understand different aspects of collaborative processes (Sabatier et al., 2005a; Ansell & Gash, 2008; Emerson, Nabatchi, & Balogh, 2011), these frameworks often lack explicit links to more fully-developed policy process frameworks that have been tested across governance topics and institutional types. Similarly, concepts from popular policy process frameworks, such as the Advocacy Coalition Framework (ACF) and Institutional Analysis and Development (IAD), have been utilized on a case-by-case basis in examinations of collaborative

processes.[1] Such studies indicate that some components of well-known policy process frameworks are indeed useful for understanding collaborative processes while others require refinement in order to holistically characterize the unique circumstances surrounding collaboration. Although collaborative governance frameworks and general policy process frameworks each serve their own important purpose in furthering studies of governance and policy development, both categories of frameworks could benefit from theoretical elaboration at their points of overlap in order to more systematically conduct and compare such studies, especially when looking across institutional arrangements.

In response, the following research lies at the intersection of collaborative governance studies and one of the most well-known and rigorously tested policy process frameworks: the ACF. Its goal is to suggest how the ACF can to be adapted in order to bridge studies of collaborative governance processes with studies of policy processes more generally. The ACF is ripe for elaboration in this area not only because it is well-recognized and well-tested by scholars across many policy-related disciplines, but because ACF scholars have already begun to formally link some of its components to collaboration through development of the "negotiated agreements" path to policy change (Sabatier & Weible, 2007), which will be discussed in more detail below. Using the basic organizational structure and major theoretical components of such a well-vetted policy process framework to systematically study collaborative processes allows for more explicit comparisons between the merits and drawbacks of this relatively new mode of governance and existing research on a broader range of governance topics and arrangements.

[1] For example, see Weible & Sabatier (2009) for an explicit comparison of the ACF's hypotheses about belief change in adversarial and collaborative subsystems; see Leach, Weible, Vince, Siddiki, & Calanni (2013) for an instance of how ACF-related theories about learning have been tested in collaborative contexts; and see Koontz (2005) for an application of the IAD in a study of the policy impacts of collaborative farmland preservation groups.

Following a brief discussion of collaborative governance processes, this paper introduces the ACF, argues why the ACF is uniquely suited for use in organizing studies of collaborative processes, and proposes how the ACF can be elaborated upon for use in studying collaborative policy processes based on a review of existing research and a new case study of a collaborative water governance process in Colorado. The paper provides a set of testable hypotheses that explicitly link the ACF's three major theoretical components—coalition dynamics, policy-oriented learning, and policy change—to studies of collaborative policy processes.

Using and Assessing Collaboration as an Environmental Governance Strategy

As changes in global climate and a growing human population, among many other issues, intensify demands on finite natural resources such as freshwater, both the need for appropriate scientific knowledge used in environmental management and the number of people who hold a stake in management outcomes increase. These factors, concurrent with the growing realization that existing top-down governance approaches are often a poor fit for managing many modern environmental problems, have spurred the initiation of environmental governance processes—especially those concerning water resources—that require more collaboration among the various governments, organizations, and individuals involved (Kenney, 2000; Gerlak & Heikkila, 2006; Koontz et al., 2004; Ansell & Gash, 2008; Koontz & Newig, 2014). Collaborative environmental governance processes bring together a wide variety of stakeholders to govern, or create and enforce rules about (Andersson et al., 2009), a resource or environment in a way that is acceptable to all participants involved. While various "contours of collaboration" certainly exist (Benson et al., 2013), many collaborative governance processes work to engage actors from public and private realms across boundaries on public policy issues with the goal of reaching

consensus on policies or management actions (Ansell & Gash, 2008; Emerson et al., 2011; Gerlak, et al., 2012). Such processes ideally develop trust and encourage knowledge-sharing among participants, create more legitimate and easily implementable management actions, and produce positive outcomes in the physical environment (Sabatier et al., 2005a).

Despite these potential benefits, collaborative governance processes face a number of tradeoffs, particularly because "[s]uccessful collaboration requires a substantial commitment of time and resources: it is a costly undertaking and its payoff in terms of outcomes is unclear" (Trachtenberg & Focht, 2005, p. 75). In other words, although scholars have argued that collaborative processes may reduce the transaction costs of governance because they allow actors to share resources and responsibilities, such costs may actually be higher in processes that require lengthy deliberation and trust-building among actors with high belief divergence (Gerlak et al., 2012). Ensuring representation of relevant interests and avoiding "lowest common denominator" solutions (Kenney, 2000; Leach & Pelkey, 2001; Sabatier et al., 2005a), especially concerning highly politicized issues, are also consistent challenges in collaborative processes. Furthermore, if the management actions developed through such processes are actually implemented, evaluating their effects on the environment, and relatedly, the effectiveness of a collaborative approach compared to another type of governance regime, is extremely difficult (Conley & Moote, 2003; Sabatier et al., 2005a; Lubell, Gerlak, and Heikkila, 2012).

In response to the increasing popularity of collaborative processes and the desire to understand whether they are more "effective" than other types of policymaking and governance processes, as well as the dearth of existing studies of collaborative processes that deeply engage or test theory (Sabatier et al., 2005a), scholars have begun developing theoretical frameworks to better analyze and evaluate collaborative processes. In the first chapter of *Swimming Upstream:*

Collaborative Approaches to Watershed Management, Sabatier et al. (2005a) present a simple framework for use in studying how the existing social and physical context, the process structure, and the consequent outcomes of a collaborative watershed management process are related. Additionally, based on a meta-analysis of 137 cases of collaborative governance processes across policy sectors, Ansell and Gash (2008) clarify the definition of collaborative governance and develop a framework to identify factors and conditions that may lead to successful collaboration. More recently, Emerson et al. (2011) integrate ideas from the theoretical and empirical literatures to produce a detailed framework for understanding collaborative governance processes in a broader system context; the authors also put forth a number of propositions that begin to theorize how the components of the framework may be causally linked. Other scholars have developed typologies of collaborative groups in order to determine how the diverse roles they play may affect policy differently (Moore & Koontz, 2003; Margerum, 2008).

While these frameworks have been crucial in helping scholars of collaborative governance identify important categories of variables that may explain why some collaborative processes are more successful than others and for spurring studies that more clearly articulate methods through which to study collaborative processes, a disconnect remains between these frameworks and the broader policy process literature, thereby stunting research that compares the processes, products, or effectiveness of various governance arrangements. For example, in a later chapter of *Swimming Upstream*, Sabatier, Leach, Lubell, and Pelkey (2005b) argue that while the collaborative watershed management framework that was presented in earlier the book has proven useful for "guiding our understanding of the factors affecting the performance of collaborative watershed arrangements in the United States over the past ten to twenty years" (p. 173), as a theoretical framework it lacks generalizability and a clear sense of process. In

response, Sabatier et al. (2005b) supplement the framework with concepts from a number of major policy process frameworks, including the ACF. This response highlights one of the earliest explicit connections between the ACF and studies of collaborative processes *and* the necessity of placing studies of collaborative governance in conversation with the broader policy process literature. While various studies have since tested individual ACF concepts in collaborative contexts as mentioned above, a thorough evaluation of the ACF in light of its applicability to studying collaborative governance arrangements is still lacking.

The Advocacy Coalition Framework

The ACF, originally developed by Paul Sabatier and Hank Jenkins-Smith in the 1980's and revised by the authors and numerous scholars in the decades since, is one of the most robustly developed and rigorously tested frameworks in policy process scholarship. In particular, it has been touted as a useful tool for constructing analyses of policy processes dealing with "wicked" problems, which tend to involve "substantial goal conflicts [among participants], important technical disputes, and multiple actors from several levels of government" (Sabatier & Weible, 2007, p. 189). Because these difficulties lie at the heart of many modern environmental governance and management situations, it is unsurprising that components from the ACF have been frequently used to study—and ideally, simplify studies of (Weible, Sabatier, & McQueen, 2009)—complex environmental governance processes in addition to processes in numerous other sectors of public policymaking.

Foundational to the ACF is the idea that "stakeholder beliefs and behavior are embedded within informal networks and that policymaking is structured, in part, by the networks" (Sabatier & Weible, 2007, p. 196). Such networks, formally called subsystems, are bounded "by both a functional dimension (e.g. water) and a territorial one (e.g., California)" (Sabatier et al., 2005b,

p. 189). Actors within a given subsystem "can be aggregated into a number of advocacy coalitions composed of people from various organizations who share a set of normative and causal beliefs and who often act in concert" to further policies that align with their values (Sabatier, 1988, p. 133). ACF scholars use all or, more often, specific components of the framework to organize studies of policy processes in order to better understand how coalitions of actors form, interact, and create policy change that aligns with their goals.

In addition to being recognized as one of the most well-developed policy process frameworks, the ACF encompasses "multiple, overlapping theoretical foci" (Jenkins-Smith et al., 2014, p. 188). In essence, the ACF is both a *framework*, which bounds inquiry and focuses on certain variables through the use of a common language, and a set of *theories*, which specify relationships among identified variables (Schlager, 2007). This allows researchers to systematically examine a policymaking process overall (using the framework as an organizing tool) while providing empirically testable theories, with the goal of reforming both the theories and the framework to better reflect the true state of policymaking. The three major theoretical foci of the ACF— advocacy coalitions, policy-oriented learning, and policy change—have most recently been outlined in detail by Jenkins-Smith et al. (2014) and will be explored below specifically in relation to collaborative processes.

Why Use the ACF to Study Collaborative Processes?

Traditionally, a major focus of ACF research has been to examine how two or more fairly stable coalitions, most frequently defined by their unique beliefs and patterns of coordination, function in a policy process. It, therefore, may seem somewhat peculiar to advocate for the ACF's usefulness in studies of collaborative processes that attempt to deemphasize the role of individual coalitions by requiring that participants work together, find areas of shared beliefs,

and come to consensus. Indeed, the ability for collaborative processes to achieve their goals in the short-term "will depend upon the actors' ability to negotiate, to learn, and to form a common ground for action across coalitions holding opposite positions," (Matti & Sandstrom, 2011, p. 386). Crucially, however, this does not undermine the importance of identifying coalitions and understanding how they function within a collaborative process. In fact, it reinforces the necessity of understanding coalitions, and particularly how they change over time to produce desired outcomes, since "adjustments in coalitions will be decisive for the legitimacy of policymaking" in the long-term (Matti & Sandstrom, 2011, p. 386). Thus, while the ACF's traditional assumption that coalitions will remain fairly stable over time (Sabatier and Weible, 2007) may not be supported in collaborative processes simply due to the institutional norms that urge participants to work toward consensus, the idea that coalition activity and interaction undergirds policy outcomes remains central to collaborative policy processes.

Importantly, ACF scholarship already recognizes the existence of "collaborative subsystems" as a unique institutional arrangement. Collaborative subsystems involve cross-coalition belief-sharing and coordination, shared decision-making power, and institutions that encourage consensus on "win-win, voluntary solutions" (Weible & Sabatier, 2009). Collaborative subsystems are typically assumed to arise from a hurting stalemate, or "a situation in which all parties to the dispute view a continuation of the status quo as unacceptable" (Sabatier & Weible, 2007, p. 206). Essentially, if all coalitions are unhappy with the status quo and each is unable to change it (by seeking out alternate policymaking venues or garnering more coalition resources, for example), such a stalemate should provide them with incentive to negotiate. While this description signifies that "adversarial" coalitions may begin to collaborate over time as other options run out, the distinction between more traditional adversarial

subsystems and collaborative is not hard-and-fast. Even in a largely collaborative process, some groups will remain adversarial despite collaborative norms, or at the very least "remain distinct in their beliefs" (Weible & Sabatier, 2009, p. 207), just as some coalitions will coordinate to various extents within a largely adversarial process.

While the "hurting stalemate" component of the ACF has been largely overlooked in most empirical ACF studies (Weible et al., 2009), many ACF scholars have already entered into conversations about collaborative policy processes, thereby drawing attention to this and other areas of overlap between the ACF and collaborative process studies. Perhaps the most explicit study of the ACF and collaboration was conducted by Weible and Sabatier (2009) in which the authors investigate the reasons behind one subsystem's shift from being generally adversarial to being generally collaborative, specifically testing two foundational ACF hypotheses that the authors adapted for application in a collaborative subsystem. In addition to this study, the book *Swimming Upstream: Collaborative Approaches to Watershed Management* features work on collaborative processes by many scholars who have previously engaged in ACF-related research. In this collection and in other places since, ACF scholars have begun to theorize about how the ACF could be modified "to be relevant to the study of watershed partnerships" (Sabatier et al., 2005, p. 194), and later, to "collaborative institutions" more broadly (Sabatier & Weible, 2007, p. 205) by making explicit connections between the ACF and the alternative dispute resolution (ADR) literature. Drawing from the ADR literature, Sabatier et al. (2005b) develop a list of nine "prescriptions concerning the design of institutions for negotiating and implementing agreements" that identify variables important to collaborative processes such as consensus norms and trust-building that have since been adopted into the ACF literature (p. 194).

Many of the ACF's other major assumptions can be capitalized upon to study

collaborative processes as well. The ACF's emphases on the centrality of scientific and technical information and the inclusion of a broad range of actors in a policy subsystem (Weible et al., 2009) resonate with the foundational reasons for initiating collaborative governance processes in many cases. Additionally, the ACF assumes that the broader institutional context in which a policy process takes place can affect policy change. Variables such as the "degree of consensus needed for major policy change" have been introduced to the framework over time in order to increase its applicability in cases in which the national political context surrounding the subsystem designates stronger consensus norms, (Sabatier & Weible, 2007), much like the superimposed consensus norms of most collaborative processes.

While there are indeed "nontrival risks" in applying a policy process theory (and framework, in the case of the ACF) outside of its intended scope, such as the potential to ignore or misconstrue unique aspects of a process in order to force it into preexisting categories (Weible, 2014, p. 394), nontraditional applications of a theory (or framework) also allow scholars to further recognize and refine its strengths and weaknesses. Thus, investigating how the ACF can be used—and where it must be modified—to study collaborative processes can work to strengthen, rather than question, its usefulness in policy process studies. Moreover, elements of the ACF have long been applied alongside elements of other policy process theories and frameworks such as multiple streams, cultural theory, punctuated equilibrium, and institutional analysis and development (Weible et al., 2009), and have even been used to provide theoretical backing for methodological approaches such as stakeholder analysis (Weible, 2006). Through this, the ACF has maintained its theoretical integrity and advanced as both a rigorous framework and set of theories as a result, perhaps due in part to its founders' commitment to flexibility and refinement over time based on new applications. Ideally, explicitly linking the ACF to studies of

collaborative governance processes will continue to grow the ACF by addressing many of the under-elaborated aspects, while also reinforcing the usefulness of its overarching structure for organizing studies of policy processes more broadly. Finally, this work contributes to the emerging field of comparative policy process scholarship, specifically by providing a tool to compare policy processes across institutional configurations (Gupta, 2012).

Modifying the ACF to Study Collaborative Processes

In order to begin the process of suggesting areas of the ACF that can be elaborated upon so that it may be better applied to studies of collaborative processes, I work from the most recent formal revision to the ACF, a chapter entitled "The Advocacy Coalition Framework: Foundations, Evolution, and Ongoing Research" by Jenkins-Smith et al. (2014) that appears in the 3rd edition of *Theories of the Policy Process,* a collection known for its concise yet thorough introductions to a number of major policy process frameworks. While numerous other chapters and articles have catalogued ACF-related studies and provided insight into existing empirical support for ACF concepts and hypotheses (see Sabatier & Weible, 2007, and Weible et al., 2009, for examples), working from this most recent summary of the ACF helps to focus the scope of this endeavor. Jenkins-Smith et al. (2014) outline the three major theoretical emphases of the ACF—**advocacy coalitions**, **policy-oriented learning**, and **policy change**; they also evaluate the traditional hypotheses within each of these areas and highlight existing knowledge gaps. Based on existing literature and an new case study, the section that follows will discuss the three major theoretical emphases specifically in relation to collaborative processes in order to identify areas in which the ACF can be adapted to better suit studies of collaborative processes.

Research Method

The theoretical elaboration that follows is based on two sources of data. One, I critically examine existing research that applies ACF components in studies of collaborative processes. In order to reduce the universe of possible studies that could be reviewed here, I review those that specifically attempt to test or modify an ACF concept or hypothesis in a collaborative context. While many of these studies exist, their findings have not been brought together with the goal of reexamining the ACF's broad applicability to studying collaborative processes. Two, I build on gaps identified through this existing research on the ACF and collaborative processes by engaging data from an original case study of a collaborative water governance process in Colorado that broadly investigates 1) how stakeholders work together to reconcile their values in a collaborative process, and 2) how policy outputs are produced in a collaborative process. Like the majority of other ACF applications Weible et al. (2009) explored in an effort to "take stock" of the ACF, this case study used the ACF to generally structure the major areas of inquiry (coalitions, beliefs, etc.) but did not explicitly test a formal ACF hypothesis. The lessons learned from this empirical application, however, are ripe for use in exploring how the ACF, as both a framework and set of theories, can be applied to studies of collaborative governance processes.

The case study was conducted by the author in Colorado during 2013-2014. In response to past drought and future threats to freshwater supplies as a result of climate change and population growth, the Colorado legislature passed the Colorado Water for the 21st Century Act in 2005 (HB 05-1177), which created collaborative "Basin Roundtables" that represent each of the state's eight major river basins plus the Denver Metro area (CWCB, 2016b). A diversity of stakeholders are required to participate on each Roundtable with the goal of working together to assess existing water supplies and gaps, and to achieve consensus on actions that may help

address the state's looming water challenges. Simultaneously, an umbrella group called the Interbasin Compact Committee (IBCC) was created to facilitate dialogue and collaboration on statewide water issues. Although the Roundtables and IBCC had a number of interim goals such as creating reports on various water use sectors, their largest task arose in the spring of 2013 when Colorado's governor issued an executive order mandating the creation of Colorado's first statewide water plan. The Roundtables were tasked with providing data and insight for the statewide plan through "Basin Implementation Plans" (BIPs) that coupled the information the Roundtables had gathered since their inception with actionable items that could help meet each basin's water supply gaps and other needs. The information from the BIPs, along with cross-basin information and policy recommendations created by the IBCC, became the centerpiece of Colorado's Water Plan. Going forward, this will be referred to as the "Roundtable process."

Like other ACF research that focuses on individual processes rather than an entire subsystem—the encouraged unit of analysis by the ACF (e.g., Matti and Sandstrom, 2011; Calanni, Siddiki, Weible, and Leach, 2014)—this case study looks closely at a complex, multi-level governance process by incorporating the perspectives of a diversity of participants in the public and private spheres. Data on this process was collected through 28 semi-structured interviews (Rubin & Rubin, 2005) with key participants from a variety of stakeholder groups and geographical areas (Table 1). All interviews were conducted after the governor's executive order to begin the creation of Colorado's Water Plan (a key moment that catalyzed collaboration among stakeholders in each Roundtable) but before the Roundtables produced their individual BIPs (the formal documentation of such collaboration). Each interview was digitally recorded, transcribed verbatim, and coded qualitatively (Auerbach & Silverstein, 2003) using QSR NVivo 10 qualitative analysis software and an a priori codebook derived from the study's major

research foci and the relevant literature on collaborative processes and the ACF; the researcher also coded the transcripts for emergent themes that appeared across interviews during the analysis process. Summaries of the coded data were then created and used to examine patterns (Miles & Huberman, 1994). Relevant findings from this study are presented below in relation to each of the ACF's three major theoretical emphases: advocacy coalitions, policy-oriented learning, and policy change. Interviewee quotes are listed along with the name of the Roundtable in which the interviewee participates to demonstrate information from a variety of respondents.

Table 1. Interview Subjects by Basin and Stakeholder Group

Basin Name	Basin Code	Agriculture	Environment/ Recreation	Industrial/ Water Provider	Local Government	Other	Basin Totals
Arkansas	AR		1		1	1	3
Colorado	CO		1	1	2		4
Gunnison	GN	1	1		1		3
Metro	MT		1	2		1	4
North Platte	NP	1	1		1		3
Rio Grande	RG	1	1	1			3
South Platte	SP	1	1		1		3
Southwest	SW		1	1	1		3
Yampa/White/Green	YWG	1	1			1	3
Stakeholder Totals		**5**	**9**	**5**	**7**	**3**	**29***

*Note: one interviewee refused to be recorded; thus, the interview could not be formally analyzed with the other 28.

Advocacy Coalitions

In the ACF, advocacy coalitions are traditionally defined by their shared policy core beliefs and nontrival coordination (Jenkins-Smith et al., 2014). Policy core beliefs are the central element in the ACF's three-tiered hierarchical belief structure, consisting of deep core, policy core, and secondary beliefs. Deep core beliefs are broad, normative assumptions about concepts such as human nature, the role of government, and the welfare of various groups (Sabatier & Weible, 2007). Actors rarely, if ever, change their deep core beliefs, and are likely to distrust individuals or coalitions with conflicting core beliefs (Leach & Sabatier 2005). Policy core beliefs are "applications of deep core beliefs that span an entire policy subsystem" (Sabatier &

Weible, 2008, p. 194), making them a particularly pertinent level of belief upon which stakeholders coalesce. Policy core beliefs may be either normative, such as value preferences for environmental protection versus economic development, or empirical, such as a belief in the cause or severity of a problem (Weible et al., 2009). In their study of collaborative carnivore management in Sweden, Matti and Sandstrom (2011) find support for the ACF hypothesis that actors tend to form coalitions with others who share policy core beliefs, especially when they are normative rather than empirical. Finally, secondary beliefs are the narrowest in scope and address issues such as the causes of particular problems and specific policy proposals to address them (Weible et al., 2009). Importantly, actors are more likely change their secondary beliefs to meet collective goals while still maintaining their deep and policy core beliefs. Put differently, actors may be willing to sacrifice specific conceptions of how ideas are carried out in practice as long as the overall policy recommendations that are developed align with their deeper beliefs.

Collaborative policy subsystems "are expected to be associated with more moderate beliefs rather than extreme beliefs and with more agreement rather than disagreement among rivals" (Weible and Sabatier 2009, p. 198). While the ACF traditionally predicts (and finds mixed support through limited empirical studies) that "administrative agencies will advocate more moderate positions than their interest group allies" in a policy process (Jenkins-Smith et al., 2014, p. 195), collaborative norms may indeed encourage *all* actors to emphasize places of belief convergence rather than divergence. Weible and Sabatier (2009) find some support for belief convergence among coalitions in a collaborative subsystem—not because all coalitions shift toward a more centrist position, but instead because one coalition changes their beliefs more over time, causing opposing coalitions to have more similar beliefs in the end than when they initially entered into the process.

In their discussion of collaborative watershed partnerships, Sabatier et al. (2005a) argue, "the greater the conflict [in beliefs among coalitions], the less likely the partnership is to reach agreement on any plan, let alone engage in restoration projects" (p. 193), signaling the importance of belief convergence in both decisionmaking and implementation in collaborative processes. A higher degree of belief convergence may also reduce the tendency for actors to experience the "devil shift," a phenomenon in which actors view their rivals as more powerful or malicious and less trustworthy (Sabatier et al., 2005b; Jenkins-Smith et al. 2014), thereby creating a positive feedback that further deemphasizes belief divergence. However, even when actors or coalitions harbor conflicting beliefs, they still may be able to build trust in one another, especially when they view the process as fair, expect to interact with one another over long periods of time, and lack alternate venues in which to achieve their goals (Leach & Sabatier 2005; Weible, Siddiki, and Pierce, 2011). Thus, even if actors or coalitions do not necessarily share beliefs, they may be more willing to work together in a subsystem under collaborative norms if factors that deemphasize belief-conflict and the tendency toward devil shift are in place.

In the Roundtable process, some coalitions were identified based on shared beliefs, as expected by the ACF. A common coalition seen in each of the Roundtables was a "nonconsumptive water use" coalition that included actors representing environmental and recreational interests who shared common policy core beliefs, such as the necessity of maintaining or increasing stream flows in specific stretches of river (i.e. a preference for preserving environmental quality over further development). Some Roundtables' nonconsumptive coalitions also included non-profits, conservation groups, federal and state water management agencies, and other interested individuals. Eventually, these coalitions became formally institutionalized when the Roundtables created "nonconsumptive

subcommittees" to assess the environmental and recreational attributes of a basin (initially for a nonconsumptive needs assessment report mandated by the state agency overseeing the process).

Crucially, in some Roundtables, the nonconsumptive coalitions were able to collaborate with other coalitions, such as those representing the interests of agricultural and municipal water users, by highlighting how achieving the goals of the nonconsumptive coalition could be mutually beneficial to other coalitions. Specifically, nonconsumptive coalition members emphasized the economic benefits associated with their goals in relation to other groups:

> *I think the reason we've been able to get a lot more people across the board to do conservation is to really recognize that there's an economic component to this… (Rio Grande Basin)*

> *And that's why I feel lucky in the Colorado Basin, because there is such a recreation-environmental-economic component and need. (Colorado Basin)*

> *[H]ere in Chaffee County…[other users] see a great economic benefit to having a state recreation area and a voluntary program. (Arkansas Basin)*

In other words, the nonconsumptive coalition members were able to deemphasize belief conflict by strategically arguing that their proposed actions served both their own policy core beliefs (preserving environmental quality) and the policy core beliefs of other coalitions (promoting economic growth), a potentially important strategy in promoting cross-coalition collaboration.

In addition to sharing policy core beliefs, coalitions are also defined by their degree of coordination. While some actors in a policy subsystem coordinate closely and regularly to plan and implement actions, coordination among others may simply "[involve] some degree of working together to achieve similar policy objectives" (Sabatier & Weible, 2007, p. 196). Within a collaborative process where actors must coordinate to some extent in order to achieve their goals, this same range of strong-to-weak coordination may be observed *across* coalitions. For instance, actors from various coalitions may identify common beliefs and decide to work

together long term to achieve goals consistent with them; or, groups of actors may only temporarily coordinate their actions toward a policy goal that is mutually beneficial, even if they do not share beliefs or develop more long-lasting coordination strategies. Calanni et al. (2014) find support for this idea: stakeholders in the marine aquaculture partnerships that they studied more often decided to coordinate with others whom they trust and whom they perceive as having valuable resources, even if they did not necessarily share beliefs.

In the Roundtable process, different actors within the nonconsumptive coalitions often demonstrated strong coordination, describing that they made a deliberate effort to consistently work together to ensure their voices were heard in a discussion historically dominated by consumptive water users. However, temporary or weak cross-coalition coordination was also commonly observed. The following quote illustrates an instance in which agricultural and nonconsumptive coalitions, who typically hold different values and goals related to water use and development, might choose to engage in weak coordination (such as simply supporting another group's proposed project) to achieve mutual benefits such as enhanced water quality:

> *I think the [downstream agricultural water users], particularly because of fruit and vineyards, support high quality water coming from the headwaters… [so] they're really supportive of nonconsumptive projects to protect water quality. (Colorado Basin)*

This may also be interpreted as opposing coalitions converging on secondary beliefs (i.e. a policy proposal to protect stream flow) without necessarily acknowledging differences in their policy core beliefs (i.e. benefits of nonconsumptive versus consumptive use), an ACF hypothesis that has seen partial support in empirical studies (Jenkins-Smith et al., 2014).

Most commonly, however, when interviewees were asked about cross-coalition coordination, they described "Roundtable-wide" collaboration among multiple or all stakeholder groups on "multi-purpose" projects that simultaneously benefitted a variety of groups:

So kind of underneath it all that is it if you get collaboration to happen, all those different representatives looking at it from each other's perspective, you basically have the whole group working toward common solutions versus having to fight over and see if you can get the votes or something, you know? (Rio Grande Basin)

[T]he people who were there to protect their interests now have to acknowledge—and I think this has been the growth within the Roundtables—that we really do need to look at it as a basin. We're all in this together… maybe I need to give a little bit so you can solve your problem. (Arkansas Basin)

[P]eople don't change their core values and it's not realistic to expect that out of a process like this. But I think there definitely is a better understanding. And probably part of why you hear so much from people about these multi-purpose projects is that one of the places where we've really been able to find a common interest… (Metro Basin)

Importantly, the Roundtable process was initiated with the norm of consensus-based decisionmaking, which ideally encourages all members to work together on mutually agreeable solutions instead of creating adversarial coalitions that attempt to gain individual "wins," even if they do not necessarily share beliefs. Thus, the formation of strongly coordinated, formal coalitions that appear to be working against the consensus norm may be limited in favor of weak, yet broad-based collaboration across all groups.

Furthermore, for some Roundtables, this widespread coordination was often described as resulting not from intentional collaboration among those that shared beliefs, but instead from discovering a common enemy:

[The participants] are very respectful… of each other [perhaps because they] direct all their disrespect to somebody in another Roundtable. And maybe there's something to that… having a common enemy. (Colorado Basin).

You've probably heard the history of threats of water exportation out of the valley… so those threats… in a really interesting way, coalesced the community…and pulled those [diverse] interests together. (Rio Grande Basin).

[T]here's really kind of coalition between the nonconsumptive and the consumptive users. You know, we all recognize that we don't want to get in a situation where there's a water call. So, what benefits the consumptive users also, for the most part, benefits the nonconsumptive users. (Arkansas Basin).

Indeed, existing ACF studies (see Henry, Lubell, & McCoy, 2011) have identified that coalitions may be "shaped more by shared opponents than by shared beliefs" (Jenkins-Smith et al. 2014, p. 196). This idea may be particularly applicable in collaborative processes where coalitions may find it easier to engage in coordination with others who at minimum share a common opponent, even if they do not converge in beliefs that encourage them to coordinate more substantially.

Weak coordination is also predicted to be a particularly "important strategy for coalitions in which organizational membership faces legal impediments that limit formalized alliances" (Sabatier & Weible, 2007, 197). While collaborative processes may not impose rules formally limiting alliances, membership of the collaborative group may be restricted by the legislation governing that process, thereby limiting the number and scope of potential allies for some actors. In the Roundtable process, each Roundtable maintains ten "designated" members appointed to the Roundtable by the counties, municipalities, and water conservation and conservancy districts within the basin's boundaries, as well as a member appointed jointly by the Colorado House/Senate Agriculture Committees. Additionally, the enacting legislation mandates that each Roundtable maintain ten "at large" members that must include representatives from environmental, agricultural, recreational, local domestic water provider, and industrial sectors (CWCB, 2016a). A state agency representative, non-voting members, and state and federal agency liaisons also participate in each Roundtable. The umbrella group, the IBCC, also formally consists of 27 members defined by the legislation: two from each Roundtable, five governor-appointed experts from relevant sectors in geographically-diverse locations, one representative appointed by chairperson of the Colorado Senate Agriculture Committee, one representative appointed by the chairperson of the Colorado House Agriculture Committee, and the governor-appointed Director of Compact Negotiations/Chair of the IBCC (CWCB, 2016c). Because of

these membership restrictions, participants in a collaborative process may engage in weak coordination with others in a way that is characteristic of actors facing limits to formal alliances simply due to the restrictions on who is available to coordinate with. Participants in this type of situation may also coordinate with auxiliary coalition actors outside of the process's formal membership who are peripheral to the central coalition and "involved intermittently or sometimes only for a short period of time" (Jenkins-Smith et al., 2014, p. 194).

Finally, actors across coalitions may be required to share resources, from money to information to legal decision-making authority, to implement consensus-based decisions or actions, further encouraging coordination on the development and implementation of policies or projects that benefit a wider range of actors who hold diverse beliefs. In the case of the Roundtables, financial resources are granted to each Roundtable by the state for use in meeting agreed-upon goals, requiring some degree of consensus among all members. While agreeing upon how to spend the money was a difficultly faced across Roundtables, participants emphasized that the process of allocating shared resources helped groups who could not afford to complete projects on their own, encouraged focus on common goals, and perhaps most importantly, served as an incentive for the Roundtables to work through some of the challenges inherent to collaborative processes such as lengthiness and disbursed decision-making authority:

> *I think the bottom line is that [the agricultural water users] can't afford to rehabilitate that reservoir on their own, so it's through the collaboration they're going to get a lot more done than they could on their own. (Rio Grande Basin)*
>
> *Well, I think the [state] grants…tend to drive some of what we do because we have to have discussion about the grants so it gives us a way to focus on what our priorities and criteria [are]. (Colorado Basin)*
>
> *[O]ne thing that has kept this process alive…throughout the state is [the shared funding process]… I'm sure it saved the [Roundtable] process statewide because it at least gave the Roundtables a specific purpose where they could take action and see things happen. (Gunnison Basin)*

Thus, while measuring the degree to which participants (or coalitions) share policy core beliefs or deliberately coordinate may not necessarily help to define and understand coalition formation and dynamics in a collaborative process, these ACF concepts can be crucial for understanding how and why certain process-wide decisions are made and implemented. In particular, strategically deemphasizing belief conflict, capitalizing on opportunities to "weakly coordinate" on mutually-beneficial projects, identifying shared opponents, and sharing funding appear to crucial drivers of cross-coalition coordination in a collaborative process. Thus, based on the existing literature and the original findings presented here, the following new hypotheses regarding advocacy coalitions within collaborative processes are posed:

H1: In a collaborative process, actors will deemphasize belief conflict by promoting actions that simultaneously serve multiple coalitions' policy core beliefs or goals.

H2: In collaborative processes, coalitions are more likely to use the strategy of "weak" coordination than "strong" coordination to achieve consensus on select actions; this may also be observed as actors converging on secondary beliefs without acknowledging differences in policy core beliefs.

H3: Actors in a collaborative process are more likely to coordinate with others they trust, perceive as having important resources, or share a common enemy with, rather than those with whom they share policy-core beliefs.

H4: When actors from different coalitions are required to share resources to implement consensus-based decisions, cross-coalition coordination will be stronger than if individual groups of actors can implement decisions with external resources.

Policy-Oriented Learning

Within a policy process, actors may experience a phenomenon known as policy-oriented learning, or "relatively enduring alterations of thought or behavioral intentions that result from experience and/or new information and that are concerned with the attainment or revision of policy objectives" (cited in Sabatier and Weible, 2007). These alterations may be related to a participant's knowledge about the relevant issue (understanding of a policy problem and

potential solutions) or about strategies for achieving one's goals in a specific political arena (Jenkins-Smith et al., 2014). Learning is theorized to be an important strategy for creating shared knowledge, overcoming collective action issues, and potentially promoting belief convergence among actors and coalitions, making it particularly relevant for the achievement of consensus in collaborative contexts (Leach et al., 2013; Muro and Jeffrey, 2008; May, 1992). Following from this, policy-oriented learning is hypothesized to be one of the four major pathways to policy change in the ACF, which will be discussed in the next section. However, policy-oriented learning is perhaps the most understudied area of the ACF (Jenkins-Smith et al. 2014) and is thus in need of further theoretical elaboration (Weible et al. 2009).

For example, descriptions of how learning actually happens vary greatly and draw on a broad range of literatures from theories of cognition to adaptive management (Muro and Jeffrey, 2008). The ACF traditionally hypothesizes that learning across belief systems (cross-coalition learning) is most likely to occur when there is an intermediate level of informed conflict (wherein coalitions have the technical resources to engage in debate) and a professional forum in which to solve the conflict (Jenkins-Smith et al., 2014). Furthermore, conflicts that involve accepted quantitative data and natural systems are expected to be more conductive to learning across belief systems than those involving qualitative, subjective data or purely social or political systems. However, there has been mixed empirical evidence for these hypotheses to date.

In the case of the Roundtables, interviewees described a number of "learning experiences" that shaped the way they participated in the process. Although a small number of interviewees indeed mentioned that learning was very slow or non-existent in the process, most explained that, as a result of their participation, they learned about relevant problems, other stakeholders' values, and possible solutions that shifted their prior beliefs and understandings:

> *I've learned how agricultural contributes significantly to late season water in a river and I didn't really think about that in the past—the importance of, especially, how we flood our fields for hay development for cattle. You know, from an environmentalist [standpoint], you look at [flood irrigation] and say, "god, that's such a waste of water"… [but] a lot of it runs off…. and fills the water table that serves the recreational season later. (Yampa White Green Basin)*

> *Oh, I've certainly made some progress in my understanding of [consumptive users' values], and I think there's been progress made in them understanding an individual of environmental concerns that isn't, you know, wild-eyed and threatening lawsuits at every turn. (North Platte Basin)*

Some interviewees also discussed the second type of learning described by the ACF—that pertaining to learning about the process itself, including strategies to achieve one's goals:

> *I've learned how to do it better. Without the opportunity to… participate in some kind of… consensus-based mechanism with this level of complexity and these problems, I don't think you get very good at it. I mean, you can believe in it or you can try it, but it really takes these kinds of things… (Yampa White Green Basin)*

Building on the idea adopted by the ACF and many other learning scholars that the institutional arrangement of a forum can affect the extent to which cross-coalition learning occur (Gerlak and Heikkila 2006, Gerlak and Heikkila 2011), Weible and Sabatier (2009) argue that collaborative policy subsystems "provide an optimal setting for learning from science and for learning across coalitions," as actors "cooperate, develop trust, and work with scientists in joint fact-finding to develop a shared knowledge base" (p. 208). Importantly, however, collaborative processes come in many forms and may not create an institutional structure that encourages such outcomes by incentivizing high levels of collaboration. For instance, in their study on collaborative research, Raadgever, Mostert, and van de Geisen (2012) find that only very intensive collaborative forums promote cognitive learning from model results and the development of consensus, particularly by increasing trust and understanding among stakeholders who are already willing and ready to learn. Similarly, Sabatier and Weible (2007) specifically note that "the higher degree of consensus required, the more incentive coalitions

have to be inclusive (rather than exclusive), to seek compromise and share information with opponents, and generally to minimize the devil shift" (p. 200), all of which can affect how participants learn from and about each other. Although specific attributes of the forum were not inquired about in relation to learning in the Roundtable process, participants implied that the organized forum was crucial for stimulating learning among process participants:

> *This Roundtable process is about people. It's not about projects… it's about the willingness of getting people to the table and to learn from each other and to educate each other… and this is… what I think is the huge success about the Roundtables: the [state] provided the forum and the mechanism for people to be able to participate. (Rio Grande Basin)*

> *Very few people had either the experience or the time or the interest in learning all these things about their neighbors [before the process began]. (Gunnison Basin)*

Additionally, the ACF recognizes that the attributes (belief systems, resources, strategies, network contacts) of individual actors working within the forum, and relatedly, the degree of existing conflict between such actors (or coalitions), can influence how learning occurs (Jenkins-Smith et al., 2014). Since actors in collaborative subsystems are generally expected to hold more moderate beliefs and exhibit more agreement (Weible and Sabatier 2009, p. 198), they may be more "primed" to learn from one another. Related to this, a number of studies concerning learning in collaborative processes (Gerlak and Heikkila, 2011; Leach et al., 2013) find that trust among participants, typically associated in some way with the extent of social interactions over time, make learning more likely. In other words, as participants get to know one another and develop trust, especially in an institutional arrangement utilizing strong collaborative norms such as consensus-based decisionmaking, they may be able to learn more. While Roundtable members held a wide variety of beliefs that conflicted to different levels, many mentioned that building trust with other members through repeated interactions over extended time periods allowed them to circumvent these differences and eventually learn from one another:

> *I think that you spend this much time together, you get to know each other, and you, you know… when you develop trust between people even if they have different agendas and different goals, they tend to be able to have a civil discussion, a, you know, worthwhile civil discussion on how we meet those different agendas and goals. (Metro Basin)*

> *I think over time, you… see more and more people come to the table not thinking about their own selfish interests. You see them thinking about broader issues… taking a… bigger look at the water picture. (Southwest Basin)*

> *The Roundtable was intended to… build relationships, build some trust, build common ground, and to [consequently] minimize—hopefully minimize—some of the opposition… When I think about the Roundtable process [in those terms], it's been a huge success here in the Rio Grande. (Rio Grande Basin)*

> *[T]hat's a big part of why the Roundtable process was created… to create familiarity not only of the facts but of the people involved. And so, any good negotiation is always more successful when there is agreement on the facts and… familiarity and friendships with people involved. Doesn't mean you're always going to agree on the solution but that certainly… helps create the possibility that you can get to that goal. (Colorado Basin)*

Other factors related to attributes of individuals, such as participants' perception of fairness in the process or strong leadership within a process, have been linked to more learning as well (Muro and Jeffrey, 2008; Gerlak and Heikkila, 2011; Leach et al., 2013). In the Roundtable process, the presence of strong leaders was particularly important in some Roundtables because these leaders were able to influence what ideas other participants choose to support, perhaps even regardless of the participants' individual knowledge or beliefs:

> *[W]e're very independent-minded and we like to do a lot of our own work. So I think it is hard. Amongst thirty people, there is [sic] definitely probably five or six really respected leaders who do most of the talking and people kind of trust their opinions… (Gunnison Basin)*

Crucially, the institutional arrangement of a process can serve to amplify or dampen these individual attributes; thus, interactions between attributes of forum and attributes of individual actors must be taken into account when studying how learning occurs.

Finally, the ACF recognizes that the information and experience participants have access to ("attributes of the stimuli") may also affect the likelihood of policy-oriented learning. More "intractable" issues, characterized by uncertainty, poor data, and widespread disagreement, are expected to foster lower levels of cross-coalition learning (Jenkins-Smith et al., 2014). In other words, processes in which clear, certain information backed by reliable data should provide a common foundation upon which actors can learn. However, Leach et al. (2013) found that high levels of certainty in the science surrounding the issue may actually impede learning in collaborative processes, potentially because such issues leave less room for participants to deliberate or "keep an open mind to new interpretations of the available data" (p. 22), which can promote creative solutions and reduce biased assimilation of information (Heikkila and Gerlak, 2013). Participants with very high levels of technical and scientific competence related to the issue may be particularly prone to the latter situation. Gerlak and Heikkila's (2011) findings also somewhat contradict the ACF's expectations. They find that actors may be more likely to learn in a decentralized process that incorporates diverse sources of knowledge (while also maintaining actors who link groups and can authoritatively disseminate information), and in forums that promote experimentation (but for which there is also a shared technical platform through which to access and disseminate this information).

Similarly, participants in the Roundtable process often highlighted the importance of different types of data as important for helping them learn and ultimately collaborate. In particular, participants in Colorado's Roundtable process frequently mentioned that learning about their physical river basin (primarily "fact-based" information), as well as their socio-cultural phenomena underlying other participants' goals (primarily "value-based" information) encouraged them to work together to find points of mutual agreement. This signals that learning

occurred both about a "natural system" (predicted to be more conductive to learning) and the socio-political aspects of the process (predicted to be less conducive to learning):

> *I think every one of us has learned a lot about other areas of the basin and how the water is used and why the water is used this way, and where the shortages exist and how they could be solved… and that's why we act so cohesively on behalf of the basin, because we're all linked together through it… (Gunnison Basin).*

> *We've got to the point where we understand people, each other… I'm much more cognizant of agricultural water needs and the agricultural tradition and culture, and, and much more, you know careful how I deal with it, because these are important values. (Colorado Basin).*

Crucially, when Roundtable members paired these fact- and value-based information sources, all of which were viewed as legitimately relevant information, they often realized that the different water uses they valued were linked together and even interdependent in some cases. This encouraged "basin-scale" deliberation and solutions that benefitted multiple stakeholders. In cases of natural resource governance, and particularly water governance, learning about the connectedness of the resource may be an especially effective way to help participants recognize their mutual dependencies, thereby encouraging them to collaborate on solutions to problems that they may have not even previously known they shared due to their different value lenses.

In summation, forums that institute highly collaborative norms such as consensus-based decisionmaking, create opportunities for individuals to build trust over time through repeated interactions, and legitimize diverse sources of information as part of the decisionmaking process can help promote learning. Based on the above information, the following new hypotheses regarding policy-oriented learning in collaborative processes are posed:

H5: Cross-coalition learning is more likely to occur in collaborative forums with stronger institutionalized collaborative norms (i.e. high degree of consensus needed for policy change) than in forums with weaker collaborative norms.

H6: Cross-coalition learning is more likely to occur in collaborative forums that require repeated face-to-face interactions over time, especially when facilitated by strong leaders, are

than forums in which actors/coalitions are not required to participate in such interactions.

H7: Cross-coalition learning is more likely to occur in collaborative processes that incorporate diverse information sources (fact- and value-based) and opportunities to openly deliberate on this information, regardless of whether the issue is primarily related to natural or social systems, as opposed to in processes that rely only on factual information or limit deliberation.

In order to test these hypotheses, however, continual development of methods to more objectively assess learning is necessary (Muro and Jeffrey, 2008; Heikkila and Gerlak, 2013).

Policy Change

The third major theoretical emphasis of the ACF concerns how policy change occurs. Understanding and defining policy change is crucial because policy processes across topics and institutional arrangements are often assessed based upon the changes they produce. The ACF defines two types of policy change: 1) major policy change, defined by changes to the core components of a governmental program that significantly deviate from previous policy; and 2) minor policy change, defined by changes in secondary aspects of programs, such as administrative rules or budgetary allocation (Jenkins-Smith et al., 2014, p. 201).

The ACF proposes four conceptual pathways to policy change: external shocks, internal events, policy-oriented learning, and negotiated agreement, the last of which is particularly relevant to studies of collaborative processes. Developed by integrating learning-related ACF hypotheses with major concepts from the alternative dispute resolution (ADR) literature (Sabatier et al., 2005b; Sabatier and Weible, 2007), the negotiated agreement path to policy change is most likely to be "facilitated by collaborative institutions conducive to negotiations" (Jenkins-Smith et al., 2014, p. 203). Indeed, Sabatier et al. (2005b) argue that the "the raison d'etre of many multistakeholder partnerships is to craft agreements among actors who have been fighting for years" (p. 194), highlighting the need for a driver of policy change that captures the effects of such processes. While hypotheses about factors that may lead to effective negotiated

agreements have been outlined (Sabatier, 2005b), negotiated agreements remain one of the "rarely explored areas" of the ACF (Weible et al. 2011, p. 357), signaling another intersection between the ACF and collaborative process studies that requires additional theory-building.

Crucial to elaborating upon policy change as it related to collaborative processes is the fact that the act of developing a negotiated agreement in does not necessarily lead to policy change, at least as it is currently defined by the ACF. First, inherent to the definition of collaborative governance is that stakeholders work across multiple jurisdictions and traditional public-private sector divides to create negotiated agreements. As a result, it is unlikely that a negotiated agreement will affect clear and measurable deviation from previous policy in a *single* governmental program—the ACF's guiding metric for measuring major policy change.

Additionally, in contrast to the decisions made in more traditional policy processes, those developed through collaborative processes typically "do not have the force of the law" (Koontz and Newig, 2014. p. 422). In other words, collaborative decisions must often be implemented by a separate entity with appropriate legal authority. Consequently, "[t]he success of collaborative approaches largely depends on the institutional configurations that support them" (Ananda and Proctor, 2013, p. 105). For instance, Koontz (2005) found that agreed-upon recommendations from collaborative farmland planning groups were more likely to be implemented when the collaborative process was incorporated into a broader land use planning process. Similarly, Koontz and Newig (2014) found that the provision of funding specifically linked to collaborative recommendations, as well as collaborative leaders who can cultivate necessary relationships and foster network-building within the broader institutional structure, were necessary for the implementation of negotiated agreements. These findings emphasize the importance of an integrated institutional structure that enables the implementation of negotiated agreements.

Finally, even if negotiated agreements are implemented, whether implementation alone qualifies as "policy change" is debatable. Collaborative processes occur at many levels with different goals—from adapting on-the-ground operations to overhauling state, national, or multi-national policy (Margerum and Robinson, 2015)—resulting in agreements on actions that vary drastically in scope and content. Furthermore, while some collaborative processes may develop and implement one major, comprehensive agreement (e.g., a restoration and monitoring plan for a stream that will be carried out over the course of several years), others may make a series of smaller, operational-level agreements throughout their existence and evolution, exacerbating the difficulty of measuring policy change due to its potentially incremental nature.

These issues of surrounding the implementation of collaborative agreements, and therefore the creation of policy change, were apparent in the Roundtable process. Some participants recognized that even if the various stakeholders within the collaborative group were able to reach a negotiated agreement, their ability to implement it was restricted by the broader institutional structure, both within and outside of the water governance subsystem:

> *What more [the Roundtable process] will accomplish is questionable I think because the Roundtable has no legal authority to do anything except present nice plans, so that's been the disconnect from the very outset… this is just an exercise in futility because even if you come up with the best plan, you still can't implement it—you have no authority. (GN-01)*

> *When you separate decision-making authority… and the [state agency] has authority and funds and they have to make decisions and do stuff, and the IBCC isn't as clear [in its role]… that makes it challenging in a new way. (RG-02)*

> *If we're really going to solve some of these issues, we really need to get some of the other local governments that are involved in land-use planning much more attuned to water and understanding the importance of how their decision-making process… feeds into our ability to meet—or not—our future water needs. (MT-03)*

In contrast, other interviewees viewed the ability to allocate state-provided funds to projects they identified and agreed upon as a legitimate source of implementation authority and, consequently,

a way they could directly effect change in their basin's management practices:

> *[T]he Roundtables themselves have money and authority—to a pretty good degree—to spend their own basin funds. (RG-02)*

> *I do think the Roundtables have a lot of power because they have complete decision-making [authority]… as to how they spend their money… In some ways I think they do have a lot of power and, and never before have we had this big bucket of money in our basin for water projects... (SW-01)*

As demonstrated by the case of the Roundtables, characterizing policy change in collaborative processes can be complex. Thus, in order to examine how the ACF's conception of policy change interfaces with collaborative processes, it is necessary to both expand and more clearly define "policy change." Particular attention must be paid to determining 1) whether the negotiated agreements produced in a collaborative process can be considered incremental steps in policy change on their own, and 2) whether the implementation of such agreements, by the collaborative group itself or by a higher authority, can be considered incremental steps in policy change. These questions require further exploration in collaborative settings, especially in respect to the under-elaborated major/minor policy change divide proposed by the ACF, as well as the idea that different types of collaborative groups produce different types of change (Margerum, 2008), an aspect not accounted for by ACF's current definition of policy change. Integrating the ACF's definition of policy change with the literature on measuring outputs and outcomes from collaborative groups (Koontz and Thomas, 2006; Mandarano, 2008; Siddiki and Goel, 2015) may be a particularly fruitful avenue through which to adapt the ACF to better study how policy change is created through collaborative processes.

Despite these gaps, a common theme arises regarding policy change in collaborative processes from the literature and case study: the ability of the institutional structure surrounding a collaborative process to circumscribe the likelihood that a negotiated agreement will be

implemented, which is perhaps the first step toward creating policy change. Based on this, the following hypothesis regarding policy change in collaborative processes is posed:

H8: Collaborative processes that are well integrated into the broader institutional structures surrounding them are more likely to effect policy change than those that are less integrated.

Crucially, the implementation of negotiated agreements will not necessarily create desired environmental outcomes. While a discussion of this link between policy change and environmental change is outside of the scope of this paper, it is a burgeoning area of study related to collaborative environmental governance (see Biddle and Koontz, 2014; Scott, 2015).

Conclusion

Using a review of the existing literature on the ACF and collaborative governance, as well as an original study of a collaborative water governance process, this paper suggests how the ACF may be adapted for use in organizing studies of collaborative policy processes. In particular, it suggests how the assumptions implicit in the ACF's three major theoretical foci—advocacy coalitions, policy-oriented learning, and policy change—can be adapted and tested in collaborative contexts. As a policy process framework, the ACF is uniquely suited for use in studying collaborative processes due to its dynamic conception of individual belief systems; its budding discussion of collaborative institutions and negotiated agreements by way of connection with the ADR literature; and its core assumptions about the roles of information, broad stakeholder participation, and institutional arrangements in policymaking. While this study helps to develop previously under-elaborated aspects of the ACF, it also lays the foundation for the creation of a tool through which policy processes in different institutional settings—particularly collaborative and adversarial settings—can be compared and assessed more rigorously.

While ACF scholars typically group actors into **advocacy coalitions** based on their

shared beliefs and degree of coordination, coalition dynamics in collaborative processes may look quite different than those in more traditional policy processes. The aim of most collaborative processes is to find areas of agreement among actors with different beliefs and goals, bringing the ideas of belief convergence and cross-coalition coordination to the forefront. Under collaborative norms, actors may strategically deemphasize belief conflict, capitalize on opportunities to "weakly coordinate" with other actors on mutually-beneficial projects, identify shared opponents, and utilize shared funding to achieve their goals, which in turn may appear to deemphasize typical coalition boundaries. Determining how and why actors with different beliefs come to consensus can help scholars understand the types of decisions that arise from collaborative processes.

Closely related to cross-coalition coordination is **policy-oriented learning**, particularly across coalitions with different beliefs. Collaborative forums are expected to be ripe venues for such learning, especially when participants attempt to create a shared knowledge base about an issue. Learning may help actors overcome challenging collective action dilemmas and possibly even encourage belief-convergence, which can lead to greater collaboration among coalitions with diverse values. While learning is certainly not guaranteed to occur in collaborative processes, forums that institute collaborative norms such as consensus-based decisionmaking, create opportunities for individuals to build trust over time through repeated face-to-face interactions, and legitimize diverse sources of information (as well as opportunities to deliberate on such information) as part of the decisionmaking process can promote cross-coalition learning.

Finally, although the ACF's focus on **policy change** specifically prescribes a pathway through which collaborative processes can effect change (negotiated agreements), this is perhaps the most unclear point of connection between the ACF and existing studies of collaborative

processes at the current time. However, developing this intersection is crucial if scholars are to use the ACF as a comparative public policy analysis tool to evaluate the effectiveness of collaborative processes compared to other institutional arrangements. Because collaborative groups often lack the authority to implement the agreements they develop on their own, scholars should begin by examining how collaborative processes are situated within broader institutional structures. It is also necessary to develop a clearer definition of policy change in regard to the outputs and outcomes produced through the many different types of collaborative processes.

Importantly, the hypotheses derived here in relation to the ACF's three theoretical foci are only the beginning of a comprehensive adaptation of the ACF for studying collaborative policy processes, especially if one wants to use the ACF as a tool to compare processes across institutional arrangements. First, the hypotheses require further refinement through empirical testing in a wider variety of collaborative policymaking settings—especially outside of the environmental realm where many studies of collaborative governance have focused thus far. Second, to begin the challenging task of determining if collaborative processes are indeed more effective than other types of processes, the hypotheses must be utilized and refined within rigorous research designs that compare collaborative processes to more traditional or adversarial policy processes. While these hypotheses do not allow for a direct comparison between collaborative and other institutional arrangements on their own, they identify variables to assess within broad theoretical foci that apply across process types using the common language of the ACF—an important foundation in expanding our comparative public policy analysis toolbox.

References

Ananda, J., and W. Proctor. 2013. Collaborative approaches to water management and planning: An institutional perspective. *Ecological Economics* 86: 97-106. DOI: 10.1016/j.ecolecon.2012.10.018.

Andersson, K. G. Gordillo, and F. van Laerhoven. 2009. *Local Governments and Rural Development: Comparing Lessons from Brazil, Chile, Mexico, and Peru.* Tucson, AZ: University of Arizona Press.

Ansell, C., and A. Gash. 2008. Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory* 18(4): 543-571.

Auerbach, C. F., & Silverstein, L. B. 2003. *Qualitative Data: An introduction to coding and analysis.* New York: New York University Press.

Benson, David, Andrew Jordan, and Laurence Smith. 2013. "Is Environmental Management Really More Collaborative? A Comparative Analysis of Putative 'Paradigm Shifts' in Europe, Australia, and the United States." *Environment and Planning A* 45 (7): 1695–712.

Biddle, J. C., & Koontz, T. M. 2014. Goal specificity: A proxy measure for improvements in environmental outcomes in collaborative governance. *Journal of environmental management* 145: 268-276.

Calanni, J.C., Siddiki, S.N., Weible, C.M. and Leach, W.D., 2014. Explaining Coordination in Collaborative Partnerships and Clarifying the Scope of the Belief Homophily Hypothesis. *Journal of Public Administration Research and Theory*. doi:10.1093/jopart/mut080

Colorado Water Conservation Board (CWCB). 2016a. Basin Roundtable Membership. Retrieved from http://cwcb.state.co.us/water-management/basin-roundtables/Pages/BasinRoundtableMembership.aspx

Colorado Water Conservation Board (CWCB). 2016b. The Interbasin Compact Committee and Basin Roundtables. Retrieved from http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/main.aspx

Colorado Water Conservation Board (CWCB). 2016c. The Interbasin Compact Committee Members. Retrieved from http://cwcb.state.co.us/about-us/about-the-ibcc-brts/Pages/InterbasinCompactCommitteeMembers.aspx

Conley, A., and M.A. Moote. 2003. Evaluating collaborative natural resource management. *Society and Natural Resources* 16(5): 371-386. DOI: 10.1080/08941920309181.

Emerson, K., T. Nabatchi, and S. Balogh. 2012. An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory* 22(1): 1-29. DOI: 10.1093/jopart/mur011

Gerlak, A. K., and T. Heikkila. 2006. Comparing collaborative mechanisms in large-scale ecosystem governance. *Natural Resources Journal* 46: 657-707.

Gerlak, A. K., & Heikkila, T. 2011. Building a theory of learning in collaboratives: Evidence from the Everglades Restoration Program. *Journal of Public Administration Research and Theory*.

Gerlak, A., Heikkila, T., and Lubell, M. 2012. The promise and performance of collaborative governance. In: *The Oxford HanOxford University Press,* New York, pp. 413-434.

Gupta, K. 2012. Comparative public policy: using the comparative method to advance our understanding of the policy process. *Policy Studies Journal* 40(S1): 11-26.

Heikkila, T., & Gerlak, A. K. 2013. Building a conceptual approach to collective learning: lessons for public policy scholars. *Policy Studies Journal* 41(3): 484-512.

Henry, A. D., Lubell, M., & McCoy, M. 2011. Belief systems and social capital as drivers of policy network structure: The case of California regional planning. *Journal of Public Administration Research and Theory* 21(3), 419-444.

Jenkins-Smith, H. C., D. Nohrstedt, C. M. Weible, and P. A. Sabatier. 2014. The advocacy coalition framework: Foundations, evolution and Ongoing Research. *Theories of the policy process* (3rd Ed.), P. Sabatier and C. Weible (Eds.). Boulder, CO: Westview Press, pp. 184-217.

Kenney, D.S. 2000. *Arguing about Consensus: Examining the Case against Western Watershed Initiatives and Other Collaborative Groups Active in Natural Resources Management.* Boulder, CO: Natural Resources Law Center.

Koontz, T. M. 2005. We finished the plan, so now what? Impacts of collaborative stakeholder participation on land use policy. *Policy Studies Journal* 33(3): 459-481.

Koontz, T. M., & Newig, J. 2014. From Planning to Implementation: Top-Down and Bottom-Up Approaches for Collaborative Watershed Management. *Policy Studies Journal* 42(3): 416-442.

Koontz, T. M., Steelman, T. A., Carmin, J., Korfmacher, K. S., Moseley, C., and Thomas, C. 2004. *Collaborative Environmental Management: What roles for Government?* New York: Resources for the Future.

Koontz, T. M., & Thomas, C. W. 2006. What do we know and need to know about the environmental outcomes of collaborative management? *Public Administration Review 66*(s1): 111-121.

Leach, W. D., & N. W. Pelkey. 2001. Making watershed partnerships work: a review of the empirical literature. *Journal of water resources planning and management* 127(6), 378-385.

Leach, W. D., & Sabatier, P. A. 2005. To trust an adversary: Integrating rational and psychological models of collaborative policymaking. *American Political Science Review* 99(04): 491-503.

Leach, W. D., Weible, C. M., Vince, S. R., Siddiki, S. N., & Calanni, J. C. 2013. Fostering learning through collaboration: knowledge acquisition and belief change in marine aquaculture partnerships. *Journal of Public Administration Research and Theory*. doi: 10.1093/jopart/mut011

Lubell, M., Gerlak, A. K., & Heikkila, T. 2013. CalFed and collaborative watershed management: success despite failure. In *Making space for the river: Governance experiences with multifunctional river flood management in the US and Europe*, J.F. Warner, A. Van Buuren, and J. Edelenbos (Eds.) IWA Publishing, London, pp. 63-78.

Mandarano, L. A. 2008. Evaluating collaborative environmental planning outputs and outcomes: Restoring and protecting habitat and the New York-New Jersey harbor estuary program. *Journal of Planning Education and Research*. Published online March 11, 2008. doi: 10.1177/0739456X08315888

Margerum, R. D. 2008. A typology of collaboration efforts in environmental management. *Environmental management* 41(4): 487-500.

Margerum, R. D., & Robinson, C. J. 2015. Collaborative partnerships and the challenges for sustainable water management. *Current Opinion in Environmental Sustainability* 12: 53-58.

Matti, S., & Sandström, A. 2011. The rationale determining advocacy coalitions: examining coordination networks and corresponding beliefs. *Policy Studies Journal* 39(3): 385-410.
May, P. J. (1992). Policy learning and failure. *Journal of public policy* 12(4): 331-354.
Miles, M.B. & Huberman, A.M. 1994. *Qualitative data analysis: An expanded sourcebook* (2nd). Thousand Oaks, CA: Sage Publications.
Moore, E. A., & Koontz, T. M. (2003). A typology of collaborative watershed groups: citizen-based, agency-based, and mixed partnerships. *Society & Natural Resources* 16(5): 451-460.
Muro, M., & Jeffrey, P. 2008. A critical review of the theory and application of social learning in participatory natural resource management processes. *Journal of environmental planning and management* 51(3): 325-344.
Raadgever, G. T., Mostert, E., & Van de Giesen, N. C. 2012. Learning from collaborative research in water management practice. *Water resources management* 26(11): 3251-3266.
Rubin, H., and I. Rubin. 2005. *Qualitative Interviewing: The Art of Hearing Data*. Second Edition. London, UK: Sage Publications.
Sabatier, P. A. 1988. An Advocacy Coalition Framework of Policy Change and the Role of Policy-Oriented Learning Therein. *Policy Sciences* 21:129-168.
Sabatier, P.A., W, M. Lubell, Z. Trachtenberg, A. Vedlitz, and M. Matlock. 2005a. Collaborative approaches to watershed management. In: *Swimming Upstream: Collaborative Approaches to Watershed Management*, P.A. Sabatier, W. Focht, M. Lubell, Z. Trachenberg, A. Vedlitz, and M. Matlock (Eds.). MIT Press, Cambridge, MA, pp. 3-21.
Sabatier, P.A., W. D. Leach, M. Lubell, and N. Pelkey. 2005b. Theoretical frameworks explaining partnership success. In: *Swimming Upstream: Collaborative Approaches to Watershed Management*, P.A. Sabatier, W. Focht, M. Lubell, Z. Trachenberg, A. Vedlitz, and M. Matlock (Eds.). MIT Press, Cambridge, MA, pp. 173-199.
Sabatier, P. A. and C. M. Weible. 2007. The Advocacy Coalition Framework: Innovation and clarification. In *Theories of the Policy Process* (2nd ed), P. A. Sabatier (Ed.). Westview Press: Boulder, Colorado, pp. 189-220.
Schlager, E. 2007. A Comparative Assessment of Policy Theories. In *Theories of the Policy Process* (2nd ed), P. A. Sabatier (Ed.). Westview Press: Boulder, Colorado, pp. 293-319.
Siddiki, S., & Goel, S. 2015. Assessing Collaborative Policymaking Outcomes An Analysis of US Marine Aquaculture Partnerships. *The American Review of Public Administration*. doi: 0275074015599603.
Scott, T. 2015. Does collaboration make any difference? Linking collaborative governance to environmental outcomes. *Journal of Policy Analysis and Management* 34(3), 537-566.
Trachtenberg, Z. and W. Focht. 2005. Legitimacy and watershed collaborations: The role of public participation. In P.A. Sabatier, W. Focht, M. Lubell, Z. Trachtenberg, A. Vedlitz, and M. Matlock (Eds). *Swimming upstream: Collaborative approaches to watershed management.* MIT Press, Cambridge, MA, pp. 53-82.
Weible, C. M. 2014. Advancing Policy Process research. *Theories of the policy process* (3rd Ed.), P. Sabatier and C. Weible (Eds.). Boulder, CO: Westview Press, pp. 391-408
Weible, C. M. 2006. An advocacy coalition framework approach to stakeholder analysis: Understanding the political context of California marine protected area policy. *Journal of Public Administration Research and Theory* 17(1): 95-117.
Weible, C.M. and P. A. Sabatier. 2009. Coalitions, science, and belief change: Comparing

adversarial and collaborative policy subsystems. *Policy Studies Journal* 37(2): 195-212.
Weible, C. M., P. A. Sabatier, H. C. Jenkins‐Smith, D. Nohrstedt, A. D. Henry, and P. DeLeon. 2011. A quarter century of the advocacy coalition framework: An introduction to the special issue. *Policy Studies Journal* 39(3): 349-360.
Weible, C. M., P. A. Sabatier, and K. McQueen. 2009. Themes and variations: Taking stock of the advocacy coalition framework. *Policy Studies Journal* 37(1): 121-140.
Weible, C. M., Siddiki, S. N., & Pierce, J. J. 2011. Foes to friends: Changing contexts and changing intergroup perceptions. *Journal of Comparative Policy Analysis: Research and Practice* 13(5): 499-525.