



Reignite Multilateralism
via Technology

D2.1 REMIT's methodological handbook

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Background of the REMIT project

The REMIT project aims to “**Reignite Multilateralism via Technology**”. A reigniting that not only reacts to China’s rise as a systemic technology rival or Russia’s resurgence as a technology abuser or the dominance of large U.S.-based digital platforms, but that sets a clear vision for the future — one in which Europe plays a leading role.

Coordinated by Maastricht University, the REMIT project brings together leading European researchers from nine partners from Belgium, Estonia, Finland, Germany, Italy, the Netherlands, Romania, and the United Kingdom. The goal is to develop recommendations, clear understanding of the status quo and innovative methodologies that support effective policies to revitalize global democratic structures.

REMIT aims to re-mobilize a transnational collective spirit that addresses global problems through technology, because

1. Technology has strong effect on economic competitiveness
2. Technology is important to national security including threats to democratic principles
3. Technology is crucial to the solutions for global challenges

By focusing on technology and the policy areas that emerge from the REMIT researchers’ expertise, the project provides the needed analysis and the theory building to support the EU. The four technology areas are also instrumental in finding solutions to all important challenges, including climate, digital transitions, the rise of inequalities, ageing and disabilities, migrations, health pandemics, and information disorder. Ultimately, REMIT intends to design policy recommendations that will give a remit to reignite multilateralism via technology. The detailed objectives of the REMIT project are:

» **Objective 1:** To define the EU’s role in leading the renewal and defence of multilateralism starting with the global governance of technologies in four crucial policy areas (digital, health bio, security and defence, and financial technologies). The lack of comprehensive, multilateral tech regulations represents material national security threats to the EU and its allies by allowing others (especially China) to set the rules for the digital future.

» **Objective 2:** To provide evidence-based advice to reinforce European institutions in the field of technology that work and propose innovative, multilateral-governance constructs for those that do not.

» **Objective 3:** To develop policy recommendations and scenario testing workshops offered to relevant EU administrators, important regional groups, and national officials.

» **Objective 4:** To share knowledge among stakeholders and to communicate policy recommendations. REMIT will recommend policy action for the European Union that further re-conceptualizes multilateralism in the four technology areas.

The REMIT project is carried out from March 2023 until February 2027 and has a total budget of almost €3 million, of which €2.6 million is funded by the EU’s Horizon Europe research and innovation program and €370k is provided by the UK government through the UK Research and Innovation fund (UKRI). The project is being carried out by internationally recognized researchers from Maastricht University, Universitatea Babeş Bolyai, Universitaet Bremen, Katholieke Universiteit Leuven, Luiss Libera Universita Internazionale Degli Studi Sociali Guido Carli, Erasmus University Rotterdam, and the Finnish Institute for International Affairs and the University of Tartu. In addition, the European Cyber Conflict Research Initiative (ECCRI) joins the consortium as an associate partner, receiving funding from UKRI.



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List of Abbreviations and Definitions

Abbreviation	Definition
ACF	Advocacy Coalition Framework
GDEL	Global Dataset of Events, Location, and Tone
IO	International Organizations
IR	International Relations
LASSO	Least Absolute Shrinkage and Selection Operator model
NGOs	Non-governmental Organizations





NTMs	Non-Tariff Measures
PSVAR	Panel Structural Vector Autoregressive model



Executive Summary

The advocacy coalition framework (ACF) is a policy-focused model that can be used to analyze and understand the dynamics of policymaking and implementation in complex political systems. The ACF framework is particularly designed to provide a common language that emphasizes important relationships in a policy area and is especially useful in explaining contentious processes and those involving substantial conflicts over goals and technical or scientific information. The ACF has been commonly used in political science and public policy research and is increasingly applied to foreign policy analysis. Within the context of REMIT project, which investigates the social-economic impacts of tech governance and the geopolitical contests among pivotal global actors, the ACF emerges as a powerful instrument for interpreting the changing beliefs and the according coalitions in domestic, international, and transnational tech policies, as well as the geopolitical contests of key global players.

This document is a handbook for REMIT researchers for employing the advocacy coalition framework to their research. It commences with a succinct introduction to the ACF's principal steps and their pertinence to REMIT inquiries. Subsequent sections delve deeper into the methodology. Sections 2.1-2.3 introduce the ACF's development, which is rooted in policy process studies. These sections also underscore the ACF's distinct advantages and points out a few known constraints. Section 2.4 presents a classical flowchart explaining the logic of the entire ACF step by step, which might be helpful for REMIT researchers as they locate their research within the ACF framework. As the ACF is flexible in its application, it is not necessary to go through all steps in one piece of research. The crux of the handbook, Section 2.5, delineates four tailored strategies for deploying the ACF, spanning from defining the unit of analysis to identifying advocacy coalitions and policy-oriented learning. This section also endeavors to weave the ACF within traditional International Relations theories, proposing both qualitative and quantitative methodologies for dissecting transnational coalitions. Pertinently, a real-time update of all cited theories, methodologies, and literature is maintained on the ACF Planet, a complimentary website available to REMIT researchers. The concluding chapter offers a precursory roadmap for organizing the scenario-testing workshops for facilitating REMIT's goal of forecasting of policy outcomes.

For REMIT researchers, the ACF is a powerful analytical tool for both tech policy evaluation and foreign policy analysis. Since beliefs, coalitions, and learning are the core concepts within the ACF, REMIT researchers have the latitude to engage with an array of empirical methods, including qualitative interviews, discourse analysis, quantitative content analysis, network analysis and index analysis. On the theoretical front, an amalgamation of the ACF with frameworks like neoclassical realism, linguistic constructivism, socialization theory, and ontological security theory can be anticipated.



1. Introduction

The ACF consists of three major components: policy subsystems, advocacy coalitions, and policy change. Policy subsystems refer to the networks of actors, organizations, and institutions involved in a specific policy domain (which can be topical or geographical). Advocacy coalitions are groups of actors who share common beliefs, values, and interests regarding a particular policy issue. Policy change refers to the process of policymaking and implementation, including the strategies used by advocacy coalitions to influence policy outcomes.

Applying the ACF is accomplished through several steps, which are specified in further detail later in the handbook. Key steps include the following:

1. **Identify the policy subsystem:** The first step in using the ACF is to identify the policy subsystem you want to analyze. This could be a specific policy area, such as healthcare or environmental policy, or a broader policy domain, such as economic policy or social policy.
2. **Identify the actors and organizations in the policy subsystem:** Once you have identified the policy subsystem, you need to identify the actors and organizations that are involved in that subsystem. This could include elected government officials, bureaucrats in government agencies, active individuals in interest groups, advocacy organizations and think tanks, relevant scientists and researchers, journalists, business and corporate representatives, non-profit leaders, active citizens, and other stakeholders.
3. **Identify the advocacy coalitions:** After identifying the actors and organizations in the policy subsystem, you need to identify the advocacy coalitions that exist within the subsystem. To do this, you should look for groups of actors who share common beliefs, values, interests regarding the policy issue and levels of trust between the members of the coalition. You can do this by analyzing policy positions, statements, and other forms of advocacy by the different actors in the policy subsystem.
4. **Analyze the resources and strategies of the advocacy coalitions:** After analyzing the beliefs and values of the advocacy coalitions, you should also analyze their resources and strategies. This could include the financial resources they have, the access they have to policymakers, and the strategies they use to influence policy outcomes.

By following these steps, researchers analyze and understand the dynamics of policymaking in complex political systems. This helps develop a more nuanced understanding of how policies are made and implemented, and how different actors and organizations can influence these processes.

1.1 The relevance of the ACF to REMIT

Using the ACF to examine technology policy and multilateralism has several benefits, including:

1. **Identifying key stakeholders:** The ACF helps researchers to identify the key stakeholders involved in specific technology policy and multilateralism, such as relevant government agencies, non-government agencies, who may reside in interest groups, in industry associations, in academia



and/or in the media, but also legal experts and technology experts. The ACF accommodates the various forums existing at many levels, from local city governments to regional lawmakers, who generate a flurry of different initiatives, policies, and regulations for technologies.¹

2. Analyzing policy subsystems: The ACF helps researchers to analyze the policy subsystems that are involved in various technology policies and multilateralism, such as regulatory agencies, international organizations, and interest groups. Researchers collect relevant policy documents, regulations, legal frameworks, and industry standards that are pertinent to the specific technology subsystem. The glue that binds the members of the coalition together are their shared beliefs and worldviews (researched in particular by Work Package 3). An advocacy coalition's beliefs are about both the international and domestic situation as related to the policy subsystem—the unit of analysis that REMIT scholars will examine.
3. Assessing coalition dynamics: The ACF helps researchers to assess the coalition dynamics that shape key technology policies and multilateralism. The ACF expects that the policy actors coordinate their behavior as advocacy coalitions and compete with other advocacy coalitions that also seek to translate their policy-related beliefs into public policy. Once policy actors observe that their opponents are beginning to pool resources and form alliances, they also begin seeking allies because “to remain without allies is to invite a defeat.”²
4. Assessing coalition capacity to influence policy processes: The ACF helps researchers to assess the capacity of each coalition to mobilize resources, frame policy issues, engage in policy networks, and employ persuasive strategies to influence policy processes. Resources include having many stable allies, having access to elected officials or officials with authority to make policy decisions, having access to money, having access to scientific and technical information, having good leadership, having supportive members in the public. Strategies include reaching out to other coalition members to coordinate tactics, getting persons outside the coalition on your side, getting the policy discussion moved to a more favorable policy venue, raising awareness in the media or leaking information to media outlets. Coalition effectiveness is linked to the ability to use resources and strategies well. By examining the resources and strategies researchers can gain insights into their ability to shape policy agendas, framing, and policy change.
5. Predicting policy outcomes: The ACF helps researchers to predict policy outcomes by identifying the factors that are most likely to influence policy change in the key technology policies under investigation. By understanding the beliefs, values, and interests of key stakeholders and by analyzing coalition dynamics, researchers can make more accurate predictions about policy outcomes. See further information on the Scenario Testing Workshops below, where REMIT researchers will share their knowledge in innovative ways.

¹ Urs Gasser and Virgilio Almeida. 2022. Viewpoint: Futures of Digital Governance. *Communications of the ACM*, 65 (3): 30-32, DOI:10.1145/3477502.

² Sabatier, 1988, p. 140.

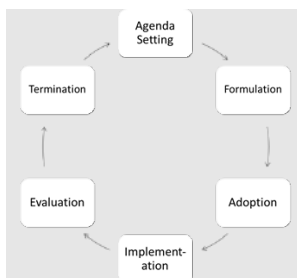


2. Description of the Methodology

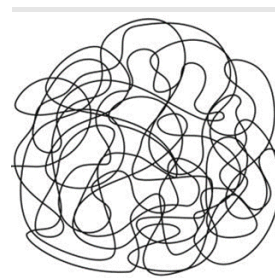
2.1 Background on Public Policy Process Studies

The ACF has its origins in studies that focus on policy processes.³

- The focus on the Policy Process emerged as a field of study in the 1950s, as part of an endeavor to develop a science, that integrates research on politics and government around a policy orientation.
- At the center of policy processes lies the elusive concept of *public policy*, which is defined as the deliberate decision—including both actions and non-actions—of a government or an equivalent authority towards specific objectives.
- Early Descriptions of Policy Processes
 - “When the policy-process approach is used, institutions and mechanisms of political organization, legislative action, executive administration, adjudication, and the rest merge into an intricately interconnected process for seeking satisfaction of societal values.”⁴
 - The “policymaking process as an extremely complex analytical and political process to which there is no beginning or end, and the boundaries of which are most uncertain.”⁵
- Definitions & Images⁶
 - Conventional definition: Policy processes involve how issues get on the agenda, are formulated, and adopted into public policies, implemented, evaluated, and possibly terminated.
 - Contemporary definition: Policy processes involve the ongoing, complex, and the political interactions among people and organizations inside and outside government over public policies.



Conventional Definition



Contemporary Definition

2.2 The Origins of the Advocacy Coalition Framework

³ Weible, Christopher M., and Paul A. Sabatier. (Eds.). 2018. *Theories of the policy process*. Routledge, p. 2.

⁴ Shipman, G. A. 1959. The policy process: An emerging perspective. *Western Political Quarterly* 12(2): 545.

⁵ Lindblom, C. E. 1968. *The Policy-making Process*. Prentice-Hall, p. 4.

⁶ Weible, Christopher M., and Karen Ingold. 2018. Why advocacy coalitions matter and practical insights about them. *Policy & Politics*, 46(2), 325-343.



Challenges 1980s to policy process studies	Design Solutions in the ACF
Limits of the policy process circle (conventional definition)	Offered a dynamic/conflict-based depiction of policy processes
Narrow depictions of actors in politics and how to organize them	Embraced an extensive set of actors and introduced “advocacy coalitions”
Questions about the appropriate unit of analysis for policy studies	Adopted the “policy subsystem” concept
Overlooking analytical debates and uses of information	Focused on learning and role of scientific and technical information
Concerns about temporality	Emphasized long-term time perspectives and policy change

2.3 Advantages of Applying the ACF

1. The ACF can explain policy change or stasis.
2. The ACF can support many types of data and forms of analyses.
3. The ACF offers a well-developed and continually improving framework for analyzing policy processes.
4. The ACF as a framework is adaptable, open to uploading other theories and analytical tools.
5. The ACF supports developing new hypotheses, testing hypotheses, or applications without any hypotheses.
6. The ACF supports comparative analysis between different policy subsystems.
7. No need to apply the whole framework.
8. The ACF can be applied for academic purposes, practical purposes, or both.
9. The community of ACF scholars is global, diverse, and willing to provide scholarly advice or assistance..
10. The ACF is applied hundreds of times in over 50 countries, thus providing many examples.^{7 8}

2.4 Known critiques of the ACF and how to address them

1. The ACF simplifies complex policy processes by categorizing actors into clear-cut advocacy coalitions.
 - Researchers can acknowledge the complexity of policy processes by using more nuanced classifications of actors and coalitions. This might involve recognizing subgroups within coalitions and accounting for shifting alliances.
2. The ACF assumes that actors within advocacy coalitions act rationally to maximize their policy preferences.

⁷ Jenkins-Smith, Hank C., Daniel Nohrstedt, Christopher M. Weible, and Karin Ingold. 2018. The Advocacy Coalition Framework: An Overview of the Research Program. In *Theories of the Policy Process*, 4th ed., edited by Christopher M. Weible and Paul A. Sabatier, 135–71. New York: Routledge.



- Researchers can incorporate behavioral insights into the framework, recognizing that actors might not always act in purely rational ways. This can involve integrating psychological and cognitive factors into the analysis.
- 3. The ACF ascribes homogeneity within coalitions when it assumes that actors within a coalition share similar beliefs and preferences. Coalitions can be internally divided, with members holding different views on specific policy aspects.
 - Researchers can recognize the dynamic nature of actors' beliefs and do such things as track changes in actors' positions over time and explore factors influencing these changes.
- 4. The ACF tends to treat actors' beliefs as static and enduring over time. However, actors' beliefs can evolve and change in response to added information, experiences, or changing political dynamics.
 - Researchers can recognize the dynamic nature of actors' beliefs and do such things as track changes in actors' positions over time and explore factors influencing these changes.
- 5. Critics of the ACF argue that it is more descriptive than predictive.
 - Researchers can incorporate their knowledge of the policy subsystems and use macro-level political, economic, and social influences into their analyses to enhance the predictive power of the ACF.

2.5 The Visual Structure including the Steps of the ACF Model

Step 1: Identify actors and their beliefs (Coalition A and Coalition B)

- deep core beliefs, policy core beliefs & secondary beliefs

Step 2: Identify advocacy coalitions = actors that share beliefs + coordination

Step 3: Identify the debates between advocating coalitions within a policy subsystem

- e.g., argumentation line, narratives/stories, evidence analysis, presentation of “facts”

Step 4: Identify the long-term opportunity structures

- e.g., consensus needed for policy change, the openness of a policy subsystem

Step 5: Identify the short-term constraints and resources

- e.g., constraints: time frames, money available, bureaucratic webs
- e.g., resources: securing allies, an ability to shift to favorable policy venues, effective strategies (i.e., the devil shift and framing an issue for a domestic audience)

Step 6: Identify the stable parameters

- e.g., social structure, distribution of resources, basic attributes of the problem

Step 7: Identify the external events

- e.g., changes in socio-economic conditions, changes in public opinion, changes in systemic governing coalition, changes in other policy subsystems, noteworthy events



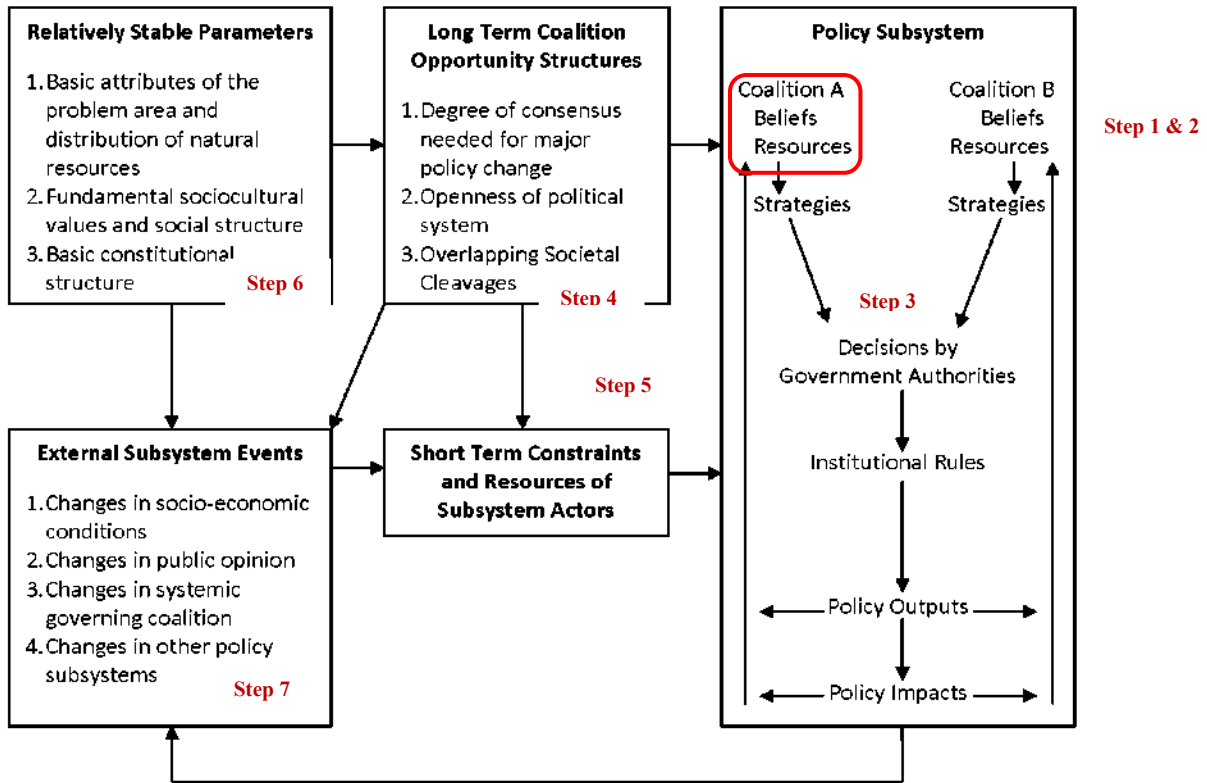


Figure from Sabatier and Weible 2014.⁹

2.6 Strategies for Applying the ACF

2.6.1 Define the Unit of Analysis

In the ACF, the unit of analysis has two possibilities:

Unit of Analysis	Description & Tips	Examples
Policy subsystems	<ul style="list-style-type: none"> Defined by geographic scope, a topical area, and the array of policy actors involved. Researchers can identify them inductively or deductively. Nested and/or overlapping. 	<ul style="list-style-type: none"> global climate change regime¹⁰ global health transnational advocacy networks¹¹

⁹ Jenkins-Smith, Hank, Daniel Nohrstedt, Christopher M. Weible, and Paul Sabatier. 2014. "The Advocacy Coalition Framework: Foundations, Evolution, and Ongoing Research." In *Theories of the Policy Process*, 3rd ed., edited by Paul Sabatier and Christopher Weible, 183–223. Boulder, CO: Westview Press.

¹⁰ Kukkonen, Anna, Tuomas Ylä-Anttila, Pradip Swarnakar, Jeffrey Broadbent, Myanna Lahsen, Mark C.J. Stoddart. 2018. International organizations, advocacy coalitions, and domestication of global norms: Debates on climate change in Canada, the US, Brazil, and India. *Environmental Science & Policy* 81: 54-62.

¹¹ McDougall, Lori. 2016. Power and Politics in the Global Health Landscape: Beliefs, Competition and Negotiation Among Global Advocacy Coalitions in the Policy-Making Process. *International Journal of Health Policy and Management*, 5(5), 309-320. doi: 10.15171/ijhpm.2016.03



		<ul style="list-style-type: none"> • UK Badger policy¹² • Colorado’s oil and gas policy subsystem¹³ • viability of Maastricht-Aachen airport¹⁴
Policymaking venues / policy decisions or policy change	<ul style="list-style-type: none"> • Decision-making venues with authority (e.g., a legislature). • Venues with informal decision-making authority (e.g., a multi-stakeholder collaborative process). 	<ul style="list-style-type: none"> • Colorado Oil and Gas Commission’s rulemaking processes¹⁵

Table 1 ACF Possible ACF units of analysis

The ACF is employed in many policy areas and contexts. It has been used extensively to study environmental policy (i.e., climate change, water management, and natural resource management), health policy (i.e. healthcare reform, disease prevention, and public health initiatives), education policy (i.e. school choice, standardized testing, curriculum development, and education funding), energy policy (i.e. debates around energy security, climate change mitigation, and the role of different energy technologies), transportation policy (i.e. debates over infrastructure investment, urban planning, and sustainable transportation options), and, of course, foreign policy (i.e. debates in U.S. foreign policy and the invasion of Iraq, debates in Swiss foreign policy towards Iraq during the Gulf War, debates in Swiss foreign policy towards South Africa during apartheid, debates in German foreign policy around its involvement in the War in Afghanistan and debates about how to reform Sweden’s signals gathering intelligence policy).

The ACF is making in-roads in studying policy at the international/transnational coalition level. For example, scholar McDougall¹⁶ investigated coalitions that advocate for universal healthcare versus coalitions that advocate for market-based approaches. She further explored the transnational coalitions in global health in relations to the concept of transnational advocacy networks as devised by Keck and Sikkink¹⁷ and the agency, structure, and the power of global health networks by Shiffman.¹⁸ Keck and Sikkink investigate transnational advocacy networks whose “actors working internationally on an issue who are bound together by shared values, a common discourse, and a dense exchange of information.”

¹² Lodge, Martin and Kira Matus. 2014. Science, Badgers, Politics: Advocacy Coalitions and Policy Change in Bovine Tuberculosis Policy in Britain. *The Policy Studies Journal* 42(3): 367-390.

¹³ Heikkila, Tanya, Weible, Christopher M. 2017. Unpacking the intensity of policy conflict: a study of Colorado’s oil and gas subsystem. *Policy Sciences* 50, 179–193, <https://doi.org/10.1007/s11077-017-9285-1>.

¹⁴ Harmsen, Lianne. 2022. The Policy Subsystem of Maastricht Aachen Airport. Capstone Bachelor Thesis, University College Maastricht.

¹⁵ Heikkila, Tanya, Pierce, Jonathan J., Gallaher, S., Kagan, J., Crow, D. A., & Weible, Christopher M. 2014. Understanding a period of policy change: The case of hydraulic fracturing disclosure policy in Colorado. *Review of Policy Research*, 31(2), 65-87.

¹⁶ McDougall, Lori. 2016.

¹⁷ Keck, Margaret E., and Sikkink, Kathryn. 1999. Transnational advocacy networks in international and regional politics. *International Social Science Journal* 51(159): 89-101.

¹⁸ Shiffman Jeremy. 2018. Agency, Structure and the Power of Global Health Networks. *International Journal Health Policy and Management* 7(10): 879-884. doi: 10.15171/ijhpm.2018.71.



However, whatever level you choose to investigate, the ACF requires a deep understanding of the context, which can be domestic or international. Since within the ACF the unit of analysis, the policy subsystem, can be defined by topic or policymaking venue, it is possible to aggregate individuals into coalitions at the local, regional (like Colorado's oil and gas), state or national (UK policy on badgers and the spread of tuberculosis) and international or transnational levels¹⁹ (global health or global climate change regime).

At the international level coalitions can cross institutions and states, thus drawing together internal and external processes. This means it is possible to construct a coalition of actors that includes multiple countries (allowing for both macro and meso analysis). In fact, explaining policy development at the international level is one of the ACF's potential major contributions to foreign policy analysis and wider contributions to International Relations (IR) theory building.²⁰ This means that the ACF provides a means to investigate policy subsystems that consider the interests and strategies of other international powers, such as the United States, China, Russia or of other regional groupings, and how these powers may or may not form coalitions with the EU.

The ACF is a useful means to investigate **international coalitions** because it allows the examination of the actions and interactions of individual actors within the coalition. The ACF emphasizes the importance of analyzing the motives, interests, and strategies of individual actors and how these shape their behavior and decision-making within a larger system. In fact, the formation and success of international coalitions depends on the leadership and influence of key actors. These actors can include powerful states, international organizations, and non-state actors such as NGOs and corporations. By analyzing these actors' interests and objectives, it is possible to understand the motivations behind the formation of the coalition and the specific goals and strategies being pursued.

Another way the ACF can be applied to international coalitions is by analyzing the interactions and relationships between different actors within the coalition. The success of international coalitions depends on the level of cooperation and coordination among coalition members. By examining the extent to which power and influence are distributed among different actors, it is possible to identify the key drivers of coalition success or failure, as well as the factors that contribute to tensions or disagreements within the coalition.

The ACF can be used to investigate the impact of external factors on the formation and behavior of international coalitions. Global economic or political trends can shape the behavior of individual actors within the coalition. The influence of domestic politics and public opinion can also affect the coalition's formation and behavior. By examining these external factors, it is possible to understand the larger social, political, and economic forces that shape the behavior of individual actors within the coalition, and the extent to which these forces affect the coalition's overall success or failure.

Another illustration of the application of the ACF to international coalitions is the global climate change regime, which is characterized by a complex web of actors with diverse interests and objectives. Kukkonen et al.²¹ investigated the key actors, which include states, international organizations, Non-

¹⁹ Jonathan J. Pierce, Holly L. Peterson, Michael D. Jones, Samantha P. Garrard, and Theresa Vuages. 2017. There and Back Again: A Tale of the Advocacy Coalition Framework. *The Policy Studies Journal* 45(S1): 24-25.

²⁰ Litfin, Karen. 2000. Advocacy coalitions along the domestic-foreign frontier: Globalization and Canadian climate change policy. *Policy Studies Journal* 28(1): 236–252; Pierce, Jonathan J. 2011. Coalition stability and belief change: Advocacy coalitions in U.S. foreign policy and the creation of Israel, 1922–44. *Policy Studies Journal* 39 (3): 411–434.

²¹ Kukkonen, et al. 2018.



governmental Organizations (NGOs), and the private sector, and noted that national climate polities are often shaped by IOs and global norms. See page 20 for further illustration of work done by Kukkonen et al. using discourse network analysis to investigate how International Organizations (IO) shape national climate policies and global norms. By analyzing the interests and objectives of the various actors, it is possible to understand the dynamics of coalition building within the regime. By analyzing the interactions and relationships between these actors, it is further possible to identify the key drivers of coalition success or failure, and the factors that contribute to tensions or disagreements within the climate policy regime.

2.6.2 Focus on Policy Change

Policy Change within the ACF scales from minor to major, with significant policy change resulting from a revision in policy core beliefs and minor policy change stemming from an adjustment in secondary beliefs. Given the challenges associated with altering the status quo, understanding individual decision-makers' deep commitment to a set of beliefs might be necessary for altering the existing situation.

In fact, major policy change needs the impetus of dynamic socioeconomic factors—such as regime change or a disaster like the invasion of a European country nearby (like Ukraine), which comes from outside the policy subsystem. As Sabatier and Weible observe, “[e]xternal shocks can shift agendas, focus public attention, and attract the attention of key decision-making sovereigns.”²² External shocks might also redistribute resources within the policy subsystem and can open and close venues. Often an external shock results in the replacement of the previously dominant coalition by a minority coalition. The policy that emerges after the shock will depend on which coalition can make effective use of the circumstances and its own resources and which coalition successfully implements its previously devised strategies. Determining the reason for policy change can be an effective strategy for Applying the ACF.

Previous approaches to analyze policy change include:

1. *Single case studies* that draw data from interviews and analysis of documents and use qualitative analysis approaches, such as process tracing (which draw an inference based on causal mechanisms and the temporal sequence of events).
 - a. E.g., Heikkila (2014) conducted 14 interviews to understand the factors that contributed to a single instance of policy change in the context of oil and gas development in Colorado.
2. *Qualitative comparative analysis* is a method for systematic comparison of a small number of cases. An example of this type of analysis is Fischer's 2015 work on eleven Swiss policy subsystems, where he explains the effect of Europeanization on change and coalition structures.²³
3. *Deductive Objective-Determinant Analysis*
 - a. **Deductive** research is driven by existing theories or hypotheses (top-down). It starts with general principles or concepts and aims to test or validate them through empirical evidence. Researchers begin with an existing theory or hypothesis and formulate specific research questions or hypotheses based on it. The research design is then developed to test these hypotheses or predictions. Data is collected and analyzed, often using

²² Sabatier, Paul, and Christopher M. Weible. 2007. The advocacy coalition framework: Innovations and clarifications. In P. A. Sabatier (ed.), *Theories of the Policy Process* (2d ed., pp. 189–222). Boulder, CO: Westview Press, p. 199.

²³ Fischer, Manuel. 2015. Institutions and Coalitions in Policy Processes: A Cross-Sectoral Comparison. *Journal of Public Policy* 35(2): 245– 268.



quantitative methods (hence the *objective* part of the approach), to determine if the empirical evidence supports or refutes the initial theory or hypothesis. **Objective** data can be obtained through methods such as experiments, surveys, or content analysis. The objective approach seeks to provide reliable and generalizable results that can be replicated by other researchers.

- b. In the context of research, a **determinant** refers to a factor, variable, or condition that influences or determines an outcome or result. It is something that has a causal or explanatory role in producing a particular effect or consequence. In research, the term determinant is often used to describe factors or variables that shape or contribute to a particular phenomenon or outcome. These determinants can be individual, social, economic, environmental, or any other relevant factors that influence the occurrence or development of a specific event or situation.
 - c. Nohrstedt et al., (2021)²⁴ analyzed a population of external events (disasters) and whether governments from 85 countries responded with policy changes.
4. *Inductive Subjective-Antecedent Analysis*
- a. **Inductive** research is driven by the data itself (bottom up). It starts with specific observations or data points and seeks to identify patterns, themes, or relationships within the data. Researchers begin by collecting and analyzing data, often through qualitative methods such as interviews, observations, or content analysis. Through a process of systematic data analysis, patterns, themes, or relationships emerge from the data.
 - b. In the context of research, **subjective** data is often qualitative, involving narratives, interviews, observations, or case studies. It focuses on capturing the nuances, meanings, and interpretations of individuals or groups being studied. The subjective approach aims to explore individual or contextual understandings, perspectives, and lived experiences.
 - c. In research, an antecedent is often used to describe a variable, factor, or condition believed to be a precursor or predictor of a particular phenomenon or behavior. It is a concept or event that precedes the variable and one that is considered to have an influence on the occurrence or development of another concept or event.
 - d. Fullerton et al., forthcoming,²⁵ analyzed a population of 77 policy changes for oil and gas development in Colorado and inductively coded any expressed antecedent factors contributing to the changes.
5. *Approaches to analyze Foreign policy Change*
- a. There are multiple examples of the ACF being applied to understand foreign policy change. Four examples are Haar,²⁶ Hirschi and Widmer,²⁷ Schroer²⁸ and Nohrstedt.²⁹ Haar examines U.S. foreign policy change under the George W. Bush administration in its decision to go to war with Iraq after the terrorist attacks of 9/11. Hirschi and Widmer

²⁴ Nohrstedt, Daniel, Mazzoleni, Maurizio, Parker, Charles F., and Di Baldassarre, Giuliano. 2021. Exposure to natural hazard events unassociated with policy change for improved disaster risk reduction. *Nature Communications* 12 (1): 1-11.

²⁵ Fullerton, A, Koebele, K, Heikkila, T, Nohrstedt, D., Weible, C.M. *Antecedents of policy change: Advancing the Advocacy Coalition Framework's Theory and Methods*. Forthcoming.

²⁶ Haar, Roberta. 2010. Explaining George W. Bush's Adoption of the Neoconservative Agenda after 9/11. *Politics & Policy* 38 (5): 965-990.

²⁷ Hirschi, Christian and Thomas Widmer. 2010. Policy Change and Policy Stasis: Comparing Swiss Foreign Policy toward South Africa (1968–94) and Iraq (1990–91). *Policy Studies Journal* 38 (3): 537-563.

²⁸ Schröder, Arne. 2014. Lessons Learned? German Security Policy and the War in Afghanistan. *German Politics* 23 (1-2): 78-102.

²⁹ Nohrstedt, Daniel. 2011. Shifting Resources and Venues Producing Policy Change in Contested Subsystem: A Case Study of Swedish Signals Intelligence Policy. *Policy Studies Journal* 39 (3): 461–84.



examine Swiss foreign policy towards Iraq during the Gulf War in 1990 and 1991 in contrast to Swiss foreign policy towards South Africa during apartheid. Schroer examines changes in German foreign policy regarding its involvement in the War in Afghanistan. Nohrstedt investigates as a case study the reform of Sweden's intelligence policy from 1999 to 2009.

- b. Haar and Pierce³⁰ is a guide to using the ACF to explain foreign policy change, which accounts for all four of Charles Hermann's primary change agents to explain foreign policy change: leaders, bureaucracies, changes in domestic constituencies, and external shocks.³¹

2.6.3 Identify Policy-Oriented Learning

The ACF assumes that advocacy coalition members may learn within and/or across coalitions, depending on the experienced stimuli.³² The ACF understands that policy processes are ongoing phenomena without beginning or end. However, research does confirm that coalitions and beliefs tend to be stable over time. Moreover, any learning that does take place tends to reinforce rather than change the beliefs of the members of a coalition.³³ The challenge in this step is to determine what indicators are accepted as evidence of learning.

Two of the best indicators/sources of learning:

1. Self-expressions of learning (e.g., in interviews or information gleaned from surveys)³⁴
 - a. Stability or instability of beliefs via self-expressions³⁵ (e.g., through longitudinal or panel data collected via interviews or surveys longitudinally)
2. Observed changes in expressions in the public discourse (e.g., through shifts in frames or narratives as found in analytical debates)
 - a. Observed changes in political behavior.
 - b. Observed policy changes.

When major policy change is correlated with the accumulation of information about an issue, and not attributable to alternative pathways to policy change (such as internal or external shocks), then the change is attributed to policy-oriented learning. Learning of this sort was identified by Weber, Driessen, Schueler, and Runhaar (2013) in Dutch noise policy.³⁶ As REMIT researchers are analyzing highly

³⁰ Haar, Roberta N., and Jonathan J. Pierce. 2021. Foreign policy change from an advocacy coalition framework perspective. *International Studies Review* 23(4): 1771-1791.

³¹ Hermann, Charles F. 1990. When Governments Choose to Redirect Foreign Policy. *International Studies Quarterly* 34 (1): 3–21.

³² Jenkins-Smith, et al. 2018.

³³ Christopher M. Weible, Kristin L. Olofsson and Tanya Heikkila. 2022. Advocacy coalitions, beliefs, and learning: An analysis of stability, change, and reinforcement. *Policy Studies Journal*. DOI:10.1111/psj.12458

³⁴ Leach, William D., Christopher M. Weible, Scott R. Vince, Saba N. Siddiki, and John C. Calanni. 2014. Fostering Learning through Collaboration: Knowledge Acquisition and Belief Change in Marine Aquaculture Partnerships. *Journal of Public Administration Research and Theory* 24(3): 591– 622.

³⁵ Henry, Adam Douglas, Thomas Dietz, and Robin L. Sweeney. 2021. Coevolution of networks and beliefs in US environmental risk policy. *Policy Studies Journal* 49(3), 675-702.

³⁶ Weber, Miriam, Peter P.J. Driessen, Ben J. Schueler, and Hens A.C. Runhaar. 2012. Variation and stability in dutch noise policy: an analysis of dominant advocacy coalitions. 2013. *Journal of environmental planning and management*, 56 (7): 953-981.



technical policy areas, change related to the accumulation of added information could be a factor in policy change, meaning policy-oriented learning might be relevant.

2.6.4 Identify the Advocacy Coalitions

The ACF offers multiple ways of identifying coalitions. Typically identifying coalitions involves measuring **coordination** (the ability to coordinate with other like-minded individuals)³⁷ and **policy core beliefs**.

How to measure coordination:

1. Coordination ties can be measured in a survey that asks for a roster or uses a name generator method.³⁸
 - a. The Roster method presents respondents with a list of relevant actors in the policy system and asks them to indicate actors with whom they share a specific type of relationship.
 - b. Name generators ask respondents to name network partners without the use of specific prompts (to list the individuals or organizations with whom they coordinate or interact most frequently regarding policy issues).
2. Coordination can be measured through a social network analysis³⁹ to verify the co-existence of similar policy beliefs, the levels of trust between members,⁴⁰ and the coordination of action, i.e., by documenting various joint activities by which policy actors try to influence public opinion via social media.⁴¹

How to measure policy core beliefs. First, it is important to know that the ACF separates core beliefs into a Three-Tiered Belief System.

	Definition	Examples
Deep core beliefs	Fundamental normative orientations	<ul style="list-style-type: none"> • Political ideologies • Normative values (e.g., religious values) • Identities • Cultural orientations • Basic priorities • Views of human nature
Policy core beliefs	Normative and empirical beliefs concerning policy subsystems	<ul style="list-style-type: none"> • General goals for a policy subsystem • Positions on general policy solutions and policy instruments • Problems severity and cause

³⁷ For a table that helps identify strong versus weak coordination as well as resources and strategies that advocacy coalitions might use see Henry, Adam D., Ingold, Karen, Nohrstedt, Daniel, and Weible, Christopher M. 2022. Advocacy coalition framework: advice on applications and methods. *Methods of the policy process*, pages 112-113.

³⁸ Weible, Christopher M., and Tanya Heikkila. 2016. Comparing the Politics of Hydraulic Fracturing in New York, Colorado, and Texas. *Review of Policy Research* 33 (3): 232-250.

³⁹ Matti, Simon and Annica Sandström. 2011. The Rationale Determining Advocacy Coalitions: Examining Coordination Networks and Corresponding Beliefs. *Policy Studies Journal* 39 (3): 385-410.

⁴⁰ Henry, Adam Douglas, Mark Lubell, and Michael McCoy. 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* 21:419-444.

⁴¹ Sabatier, P.A. and Christopher M. Weible. 2007. The Advocacy Coalition Framework: Innovations and Clarifications. In: Sabatier, P.A., Ed., *Theories of the Policy Process*, West Press, Colorado, 189-220.



		<ul style="list-style-type: none"> • Role of government in subsystem affairs (e.g., vs. markets)
Secondary core beliefs	Instrumental beliefs or beliefs about a subset of a policy system	<ul style="list-style-type: none"> • Instrumental means for achieving policy-core ends (or goals) • Relative weight of various causal mechanisms of problems • Solutions and problems associated with part of a policy subsystem

Table 2 ACF levels of beliefs

How to measure policy core beliefs, second step, which involves several strategies.

1. Coalitions can be identified via clustering the expressions of policy core beliefs over time, as in the news media or other media outlets.
 - a. See Henry, et al. 2022 page 11 for methods of quantitative methods of belief clustering (i.e., k-means clustering, principal components analysis, and factor analysis).
2. Coalition strength can be measured via an Index,
 - a. An index is a composite statistic—a measure of changes in a representative group of individual data points, or in other words, a compound measure that aggregates multiple indicators. Indexes (also known as composite indicators) summarize and rank specific observations.
 - b. In the case of ACF, an index could measure belief similarity and the coordination of action, making it possible to assess whether advocacy coalitions are found in a policy subsystem and how individual actors contribute to coalition formation.
 - c. An index could provide a *standardized* method for identifying coalitions that can be applied to comparative research based on cross-case comparisons—a useful aspect for REMIT researchers who want to better understand how country-level characteristics condition politics and policy processes.⁴²
 - d. An index further aids in determining how individual actors contribute to coalition formation.
 - e. Satoh et al. 2020 illustrate the effectiveness of an index with a case analysis and comparison between two climate-change policy subsystems (Finland and Sweden), which differ in belief and coordination of action.
3. Innovations in the development of a codebook, which further facilitates comparative studies between countries, such as that done by Heikkila et al. in comparing shale development politics in the U.S., Argentina, and China using media content analysis.⁴³
 - a. The development of a codebook⁴⁴ also makes data manageable and bolsters the ACF’s comparative and explanatory powers. REMIT scholars employing *Qualitative Content Analysis* of media and other relevant documents (e.g., legislative hearings and testimonies in hearings) would benefit from the development of a codebook. Qualitative research is a methodology that can be applied to textual or multimedia data involving a

⁴² Keiichi Satoh, Antti Gronow and Tuomas Ylä-Anttila. 2020. The Advocacy Coalition Index: A new approach for identifying advocacy coalitions. *Policy Studies Journal* DOI: 10.1111/psj.12450.

⁴³ Heikkila, Tanya, Ramiro Berardo, Christopher M. Weible and Hongtao Yi. 2019. A Comparative View of Advocacy Coalitions: Exploring Shale Development Politics in the United States, Argentina, and China. *Journal of Comparative Policy Analysis: Research and Practice* 21 (2): 151–166.

⁴⁴ Heikkila et al. 2019; Martin Lodge and Kira Matus. 2014. Science, Badgers, Politics: Advocacy Coalitions and Policy Change in Bovine Tuberculosis Policy in Britain. *Policy Studies Journal* 42 (3): 367-390.



personal examination of the data by the researcher to find meaning. Qualitative Content Analysis could involve systematic coding of textual data based on predefined categories or coding schemes (noted in a codebook). Content could be gleaned from a key word search in databases like *Lexis Nexis*; the codebook could give systematic instructions for entering data into code form.

- b. Coding could be done through Atlas.ti or other software programs that facilitate the coding and analysis process in Qualitative Content Analysis.⁴⁵
 - Codes could include: Article ID, Article Title, Article Source, Article Author, Article Date, Article Org ID, Actor Name, Actor Organization Name, Coalition stance, and Agreement/Disagreement, Deep core beliefs, Near core beliefs, Preferences for specific policies, Coordination of Political Activities, Resources, and External shocks.
 - c. Developing a codebook introduces a standardized approach for measuring coalition attributes across countries. A comparative policy process using a codebook can explore how coalitions vary in their composition across countries with significantly different political opportunity structures (i.e., democratic versus authoritarian).
 - d. *Because the example of the codebook is useful for REMIT researchers, the codebook developed by Heikkila et al. is found in the Annexes.*
4. Another example of comparative policy processes is done by Marlene Kammerer et al. on climate policy in South Korea, the United States, Sweden, and Switzerland. This research uses network survey data on the climate policy domains in the four countries.⁴⁶

A few additional observations on measuring policy core beliefs and an acknowledgement on some limitations for REMIT research. Some nation-states have political systems that are more closed (like China), which make it harder to compare but also for gathering data. This is not a new problem and one encountered by earlier ACF researchers. For example, in early works of the ACF, the main forms of policy subsystems were identified by one of its pioneers, Christopher Weible. These forms are *adversarial*, *cooperative*, and *unitary*. Coalition members exclusively collaborating with like-minded actors and competing with other coalitions (which is often found in the U.S.) characterize the *adversarial* subsystem. In a *cooperative* subsystem, members collaborate not only with like-minded actors but also with actors whose beliefs differ from their own (like the Polder model). The last type, the *unitary* subsystem, is characterized by the existence of a single dominant coalition (like China).⁴⁷ The codebook example by Heikkila et al. also includes information on how to gather useful and comparative data from China. Other examples of comparative policy processes that include China can be found in Henry et al. 2014.⁴⁸

⁴⁵ Since textual analysis has become a major form of analyzing human thought and behavior, several other software options are available. Other software includes: NVivo, MAXQDA, Dedoose, QDA Miner, and RQDA. These software programs provide researchers with a range of features and functionalities to facilitate the coding, organization, and analysis of textual data in Quantitative Content Analysis.

⁴⁶ Marlene Kammerer, Paul M. Wagner, Antti Gronow, Tuomas Ylä-Anttila, Dana R. Fisher, Yun Sun-Jin. 2021. What Explains Collaboration in High and Low Conflict Contexts? Comparing Climate Change Policy Networks in Four Countries. *Policy Studies Journal* 49 (4): 1065-1086. DOI.org/10.1111/psj.12422

⁴⁷ Christopher M. Weible. 2005. Beliefs and perceived influence in a natural resource conflict: An advocacy coalition approach to policy networks. *Political Research Quarterly* 58: 461–475.

⁴⁸ Henry Adam Douglas, Karen Ingold, Daniel Nohrstedt, Christopher M. Weible. 2014. Policy Change in Comparative Contexts: Applying the Advocacy Coalition Framework Outside of Western Europe and North America. *Journal of Comparative Policy Analysis* 16 (4): 299–312.



2.7 Additional Clarification on the ACF and IR theories

The ACF was originally designed to interpret domestic policy changes, including those in foreign policy, using key concepts such as beliefs, advocacy coalitions, and policy-oriented learning. However, REMIT researchers are advancing the framework by applying the ACF to broader contexts in international relations and global governance. Accordingly, this section first treats the ACF as an instrument for analyzing shifts in foreign policy, aligning it with the neoclassical realism of IR theories. Subsequent sections elevate this discussion to the international plane, linking the ACF with beliefs in IR theories. This is further supplemented with examples demonstrating how the ACF can be utilized to study international and transnational coalitions, drawing from prior empirical research.

When analyzing foreign policy changes, the ACF emphasizes the process describing the formation of domestic advocacy coalitions based on shared beliefs and interprets how these coalitions sway foreign policy decisions. As to the agents, Haar and Pierce connect ACF with Charles Hermann's framework, pointing out that leaders, bureaucracies, any changes in domestic constituencies, and external shocks are the four primary change agents central to the policy change process⁴⁹. However, in the language of scholars focusing on IR theories, all four agents match neoclassical realism theories.

Neo-classical realism emerged as a theoretical framework analyzing foreign policy during the 1990s⁵⁰. It blends elements from both classical realism and structural realism to better account for the role of domestic variables and leaders' perceptions in foreign policy. Structural realists primarily attribute state behavior to the constraints of the international system, while neo-classical realists argue that there is an intermediate step: the international system influences domestic factors, which in turn shape foreign policy decisions.

However, neo-classical realism is a vague and loose framework instead of a rigorous theory, with the exception of the "golden rule" that structural pressure, the domestic environment, and leaders' perceptions constitute foreign policy change. The loose nature of neo-classical realism means that scholars have flexible options for selecting mediating variables. For instance, Randall Schweller focuses on the degree of regime stability, elite cohesion, and social cohesion as domestic indicators for predicting a state's balancing strategies⁵¹. However, Thomas J. Christensen employs the national political capacity as a mediating variable for explaining why the U.S. held exaggerated policies towards China between 1947 and 1950⁵². Accordingly, the ACF (which focuses on the domestic decision-making process involving leaders, bureaucracies, domestic constituencies, and external shocks), naturally fits the second step of neo-classical realism, viewing the conflicts and learning between advocacy coalitions as the domestic translation of systematic pressure.

At the level of interstate interactions, the REMIT project intends to push forward a new research agenda that investigates coalitions among state and non-state actors in response to global issues. Therefore,

⁴⁹ Roberta N. Haar, Jonathan J. Pierce. 2021. Foreign Policy Change From An Advocacy Coalition Framework Perspective. *International Studies Review*, 23(4), 1771-1791.

⁵⁰ Gideon Rose. 1998. Neoclassical Realism and Theories of Foreign Policy. *World Politics*, 51(1), 144-172.

⁵¹ Randall L. Schweller. 2010. *Unanswered Threats: Political Constraints on the Balance of Power*. Princeton University Press.

⁵² Thomas J. Christensen. 1996. *Useful Adversaries: Grand Strategy, Domestic Mobilization, and Sino-American Conflict, 1947-1958 (Vol. 179)*. Princeton University Press.



the rest of this section provides both theoretical discussions and empirical applications about how to connect the ACF with international studies.

Before connecting with systematic IR theories, the applications of the ACF in international studies must account for the strong assumption that the state is a unitary actor that holds preferences based on its beliefs. Thus, on one hand, states are considered as “basic units” rather than an “unpacked blackbox” in the international system, as Waltz declared⁵³. On the other hand, states should not be completely rational and emotionless, as according to the ACF, one state’s international behaviors are featured by its policy beliefs (deep core beliefs, policy core beliefs, and secondary core beliefs). Meanwhile, the application of the ACF at the international level requires another prerequisite: international policy change (multilateral, transnational, global) that involves actors (state, non-state, transnational), that aggregate themselves into transnational advocacy coalitions based on their contested beliefs. These coalitions also can learn from each other. Therefore, the ACF could connect with the mainstream IR theories in diverse research agendas.

Neorealism or structural realism emphasizes the polarity of the international system, indicating that the number of great powers in the system will shape the foreign behaviors of the states inside the system⁵⁴. Due to neorealism’s prioritization of state material capacity, its connections with the ACF will focus on international cooperation and competition in multiple issues, such as the military, security, diplomacy, and the economy. The formation of international coalitions under polarized systems is the point of connections for both research agendas. Under a unipolar system, the role of beliefs about cooperation with other states might be a case to investigate. It should be noted that in third-generation studies on hegemony, for example, scholars emphasize the domestic resources of defining the international role of a hegemon and its challengers (which foresees the ACF’s contribution in this field but follows the neo-classical approach mentioned above). Here in the international plane, the ACF could concentrate on international security coalitions or economic coalitions, and not only via formal channels (e.g., alliance) but also informal cooperation (e.g., community, partnership, forum, dialogue).

Neoliberal institutionalism emphasizes the role of international institutions and the cooperation under and within these institutions (although some scholars also discuss institutional competition)⁵⁵. The connections between this paradigm and the ACF concentrate on so-called “low-political” issues. This is because neoliberal institutionalism emphasizes a state’s soft power or institutional power. In addition, due to the feature of de-nationalization, multiple actors are involved, such as international organizations, transnational enterprises, civil society, and key opinion leaders. The ACF under this paradigm could analyze how these actors share similar beliefs, coordinate with each other, and then shape global public policies under and within international or transnational institutions. Furthermore, it should be noted that this paradigm implies liberalism and institutionalism thinking in international relations, which assumes institutional cooperation is always acceptable. However, some states or non-state actors (during some periods) might hold beliefs suggesting cooperation can take place without institutions or even that no cooperation (in some policy issues) is a preferable policy stance.

⁵³ Kenneth N. Waltz. 1979. *Theory of International Politics*. Addison-Wesley Pub; Robert Gilpin. 1971. The Politics of Transnational Economic Relations. *International Organization*, 25(3), 398-419.

⁵⁴ Kenneth N. Waltz. 1979. *Theory of International Politics*. Addison-Wesley Pub.

⁵⁵ Robert O. Keohane & Joseph S. Nye Jr. 1973. Power and Interdependence. *Survival*, 15(4), 158-165; Robert O. Keohane. 1984. *After Hegemony*. Princeton: Princeton University Press; Julia C. Morse & Robert O. Keohane. 2014. Contested Multilateralism. *The Review of International Organizations*, 9, 385-412.



Constructivism emphasizes the roles of ideas, norms, and beliefs in international society, which reflects the theoretical foundation of the ACF in international relations and is the most relevant IR approach to the ACF. Firstly, shared beliefs and norms, instead of material capacities, are the foundations of international or transnational advocacy coalitions. Constructivist scholars investigate both the impacts of structural norms on states⁵⁶ and the process of how states adopt and internalize certain norms⁵⁷. Secondly, some constructivist scholars also investigate how international norms are created and diffused⁵⁸ as well as how international actors promote certain norms via transnational advocacy networks⁵⁹. Lastly, constructivism emphasizes the role of language in IR, which matches the ACF's attention to framings, narratives, and discourses. For instance, Manuel Castells emphasizes the role of discourse and identity in the age of information and its influence on transnational networks⁶⁰. Michel Foucault's notion of discursive formations is also a solid foundation for this approach⁶¹. In addition, some other schools of IR theories also mention the interactions and evolutions of international beliefs and norms. For instance, the English School, particularly Barry Buzan, emphasizes the process that states would internalize the shared primary norms and shared beliefs in the international society and their beliefs and international behaviors would shape the international society as well⁶². While for the Chinese School, processual constructivism highlights the relationality and the process-based ontology of international relations, which believes the shared beliefs and culture of international society would experience four stages: war, competition, cooperation, peace-cooperation⁶³. Constructivism in IR theories broadly and carefully investigates the formation, diffusion, and interaction pattern of norms and languages, which sets a solid foundation for an ACF application at the international level.

To summarize, existing IR theories have strong connections with all ACF core elements: foreign/global policy change, domestic/transnational advocacy coalitions, and beliefs in decision-making processes. For foreign policy analysis, the ACF matches the framework of neo-classical realism, which emphasizes systematic pressure, the domestic environment, and leaders' perceptions. For international/global policy changes, the ACF shares certain agendas with neorealism and neoliberalist institutionalism but has the tightest connections with the constructivist approach, as it highlights the role of norms, beliefs, and languages in transnational networks. However, the theoretical discussions above only provide preliminary foundations of the ACF application in IR theories. It is still abstract for empirical analysis. Therefore, the following part of this section introduces two empirical research studies that apply

⁵⁶ Alexander Wendt. 1999. *Social Theory of International Politics*. Cambridge University Press; Thomas Risse, Thomas Risse-Kappen, Stephen C. Ropp & Kathryn Sikkink (Eds.). 1999. *The Power of Human Rights: International Norms and Domestic Change*. Cambridge University Press.

⁵⁷ Jeffrey T. Checkel. 1997. International Norms and Domestic Politics: Bridging the Rationalist—Constructivist Divide. *European Journal of International Relations*, 3(4), 473-495.

⁵⁸ Martha Finnemore & Kathryn Sikkink. 1998. International Norm Dynamics and Political Change. *International Organization*, 52(4), 887-917.

⁵⁹ Margaret E. Keck & Kathryn Sikkink. 1999. Transnational Advocacy Networks in International and Regional Politics. *International Social Science Journal*, 51(159), 89-101; Margaret E. Keck & Kathryn Sikkink. 1998. *Activists Beyond Borders: Advocacy Networks in International Politics*. Cornell University Press.

⁶⁰ Manuel Castells. 1996. *The Information Age: Economy, Society and Culture (3 volumes)*. Blackwell, Oxford, 1997, 1998.

⁶¹ Michel Foucault. 2013. *Archaeology of Knowledge*. Routledge.

⁶² Barry Buzan. 2001. The English School: An Underexploited Resource in IR. *Review of International Studies*, 27(3), 471-488.

⁶³ Yaqing Qin. 2016. A Relational Theory of World Politics. *International Studies Review*, 18(1), 33-47; Xiaofeng Yu & Ruth Kattumuri. 2016. Dragon and Elephant, Shoulder to Shoulder: Nontraditional Security Cooperation between China and India. *Journal of International Security Studies*, 3, 3-28.



quantitative and qualitative methods respectively, showing how to identify and visualize international coalitions, as well as analyze the coalition network.

2.7.1 Example of Qualitative analysis of Transnational Coalitions

For qualitative analysis, the International Organizations, Advocacy Coalitions, and Domestication of Global Norms: Debates on Climate Change in Canada, the US, Brazil, and India, published in 2018 by Kukkonen and her coauthors,⁶⁴ applies the discourse network analysis to investigate how International Organizations shape national climate policies and global norms.

They collected over 3,500 documents in 11 newspapers in Canada, the US, Brazil, and India between 2007 and 2008, coding each document about three attributes: (1) the organization making the statement; (2) the belief category, derived inductively from the data; (3) agreement or disagreement with the belief category.

Then, they visualized the data (refer to Figures 1-4) and used Visone software to analyze the feature of the discourse network. Their findings suggest that in the high-income countries where greenhouse gas emissions are high (Canada and the US), IOs are less central in the policy debates and the discourse network is strongly clustered into competing advocacy coalitions. In the low emitting countries (Brazil and India) IOs are more central and the discourse network is less clustered.

⁶⁴ Kukkonen, et al. 2018.



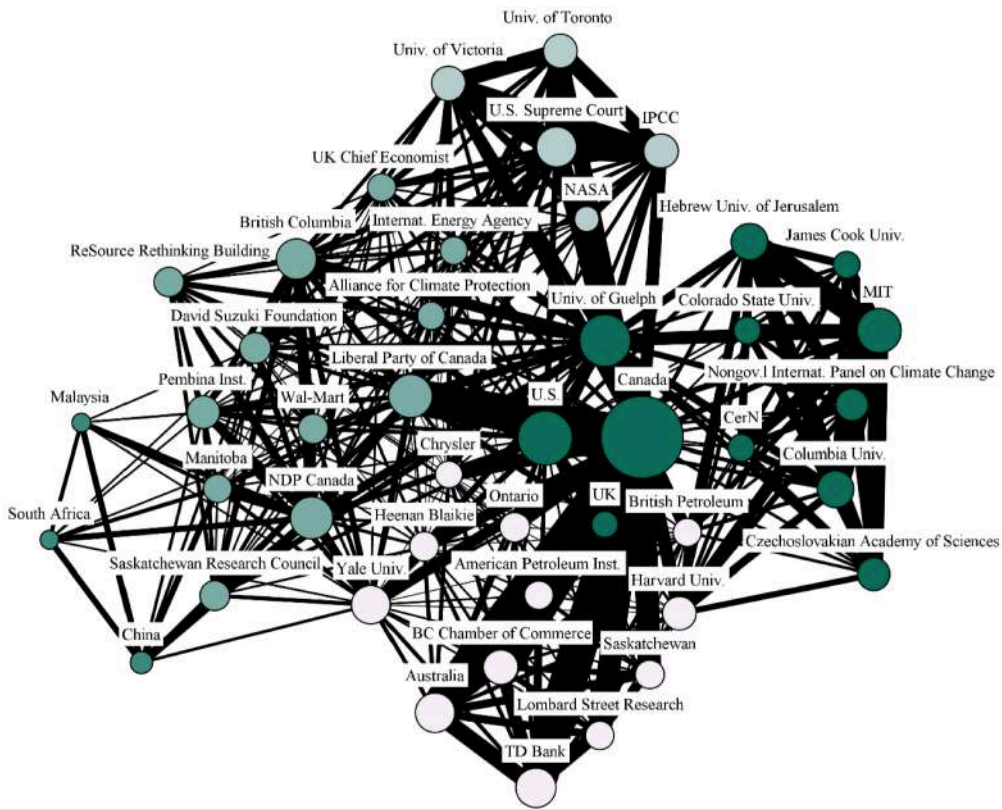


Figure 1. Canada

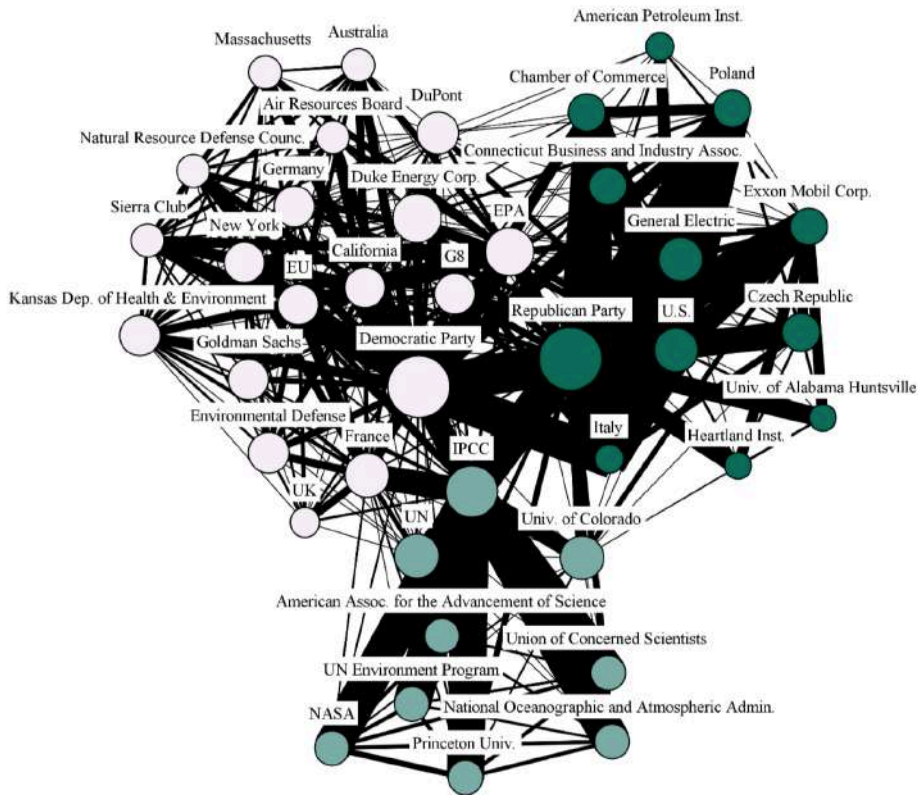


Figure 2. The US



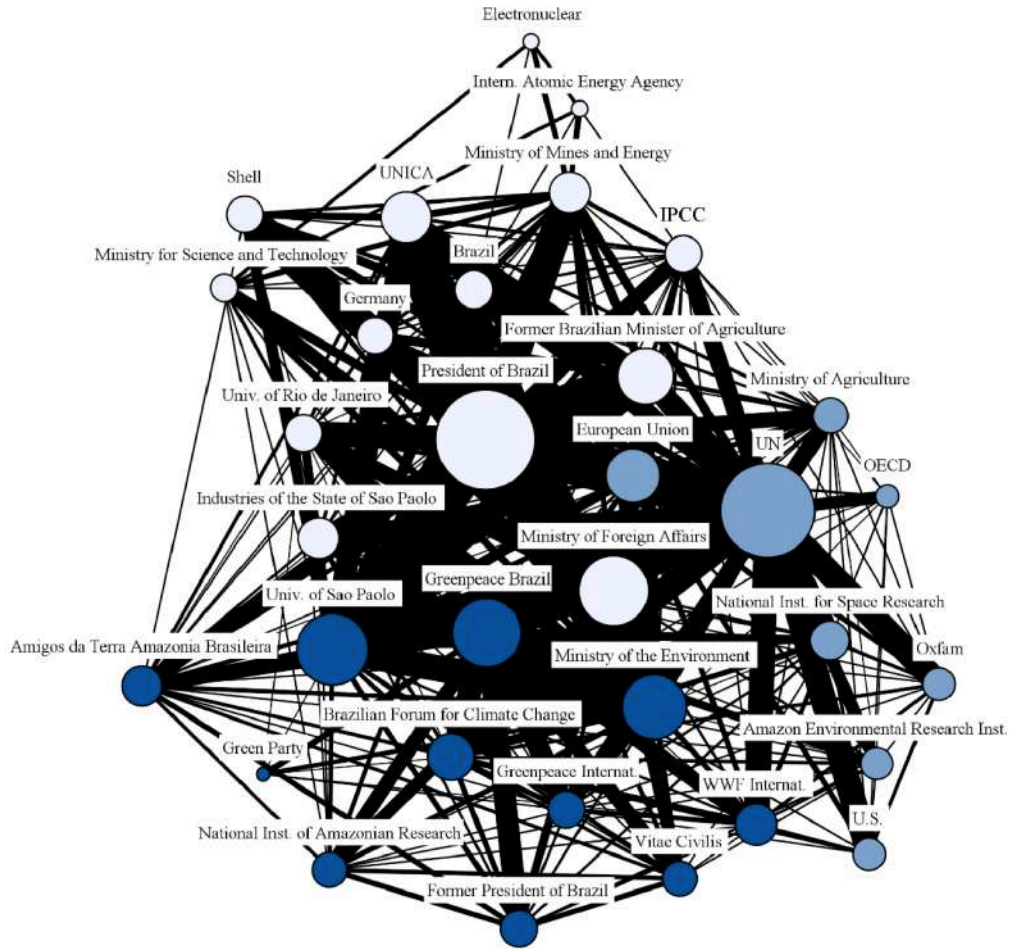


Figure 3. Brazil

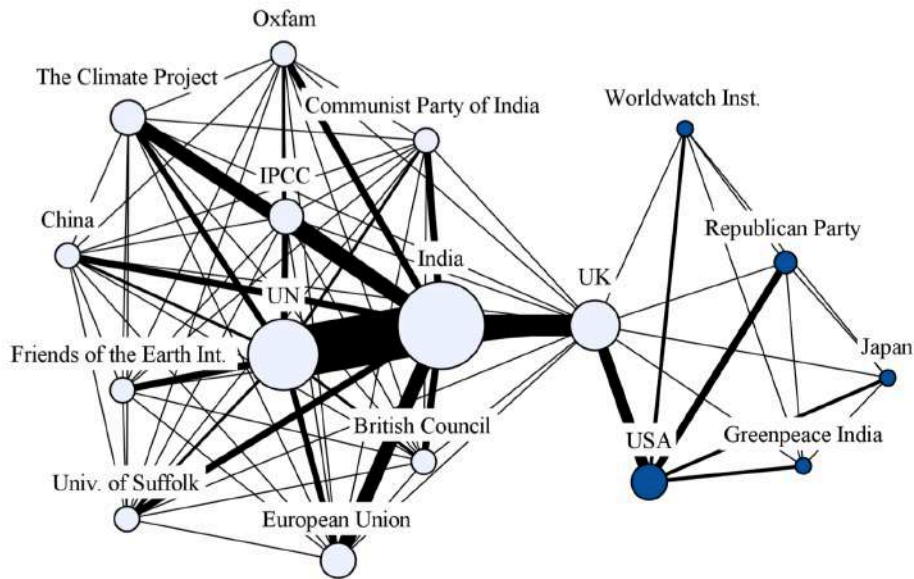


Figure 4. India



2.7.2 Example of Quantitative analysis of Transnational Coalitions

For quantitative analysis, the *Coalitions in International Relations and Coordination of Agricultural Trade Policies*, published in 2023 by Mao,⁶⁵ applies machine-learning models to examine the existence and pattern of coalitions in international relations across countries, and investigates whether the international relations of coalition partners influence a country’s authorization of agricultural non-tariff measures.

He collects data about the similarity of states’ patterns based on the event data and the Goldstein scores from the Global Dataset of Events, Location, and Tone (GDELT). Then, he applies the Least Absolute Shrinkage and Selection Operator (LASSO) model to learn how the international relations with China of each event source country is determined. Mao also adopts a Panel Structural Vector Autoregressive (PSVAR) model to formally reveal and quantify impacts of international relation coalitions on agricultural Non-Tariff Measures (NTMs) coordination. His results reveal a cluster of coalitions among “North” countries and that of coalitions among “South” countries, with the United States found to play a vital role that connects these clusters (refer to the Figure 5). The PSVAR model illustrates that the coalition in international relations will lead to coordination of agricultural NTMs.

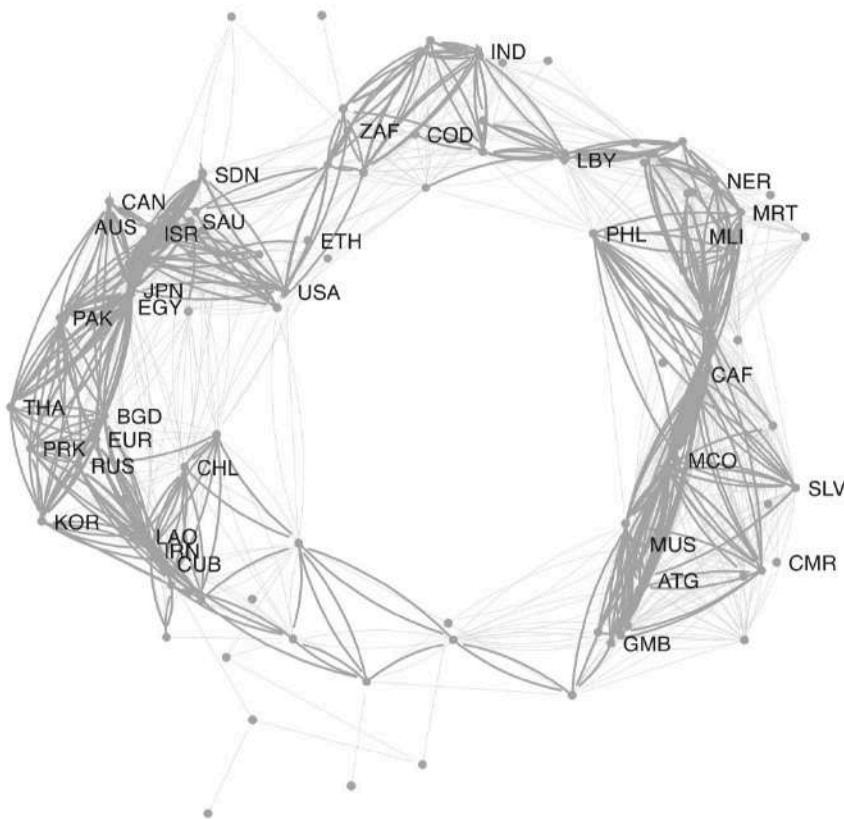


Figure 5. Network of international relations with China and coalition patterns

⁶⁵ Mao, Rui. 2022. Coalitions in international relations and coordination of agricultural trade policies. *China Agricultural Economic Review* 15(2): 433-449.



2.8 A Useful Categorization of ACF Past Scholarship

REMIT Researchers have access to the ACF Planet, an interactive website that serves as a workspace and research database for members of the REMIT community. The website contains information, resources, and tools related to research and analysis.

1. Description of ACF's major theories and methods
 - a. (Sabatier, 1988) *An advocacy coalition framework of policy change and the role of policy-oriented learning therein* #Theory
 - b. (Jenkins-Smith et al., 2018) *The advocacy coalition framework: An overview of the research program* #Theory
 - c. (Henry et al., 2022) *Advocacy coalition framework: advice on applications and methods* #Method
2. Empirical applications
 - a. Foreign Policy, tech policy, and other policy areas (climate policy, trade policy, etc.) (Haar, 2010) *Explaining George. W. Bush's adoption of the neoconservative agenda after 9/11* #Foreign Policy
 - b. China, EU, United States, and other actors (Africa, Russia, etc.) (Francesch-Huidobro & Mai, 2012) *Climate Advocacy Coalitions in Guangdong, China* #China
3. Reviews of applications
 - a. (Pierce et al., 2022) *Common approaches for studying advocacy: Review of methods and model practices of the Advocacy Coalition Framework* #Review of methods
 - b. (Osei-Kojo et al., 2022) *The advocacy coalition framework: lessons from applications in African countries* #Review of applications in African countries
 - c. (Gabehart et al., 2022) *Lessons from the Advocacy Coalition Framework for climate change policy and politics* #Review of applications on climate change
4. Theory/method modules
 - a. Policy analytical capacity (Elgin et al., 2012) *Policy analytical capacity inside and outside of government: A case study of Colorado climate and energy issues*
 - b. Discourse Network Analysis (Leifeld, 2013) *Reconceptualizing major policy change in the advocacy coalition framework: A discourse network analysis of German pension politics*
 - c. Cultural Theory (Jenkins-Smith et al., 2014) *Belief system continuity and change in policy advocacy coalitions: Using cultural theory to specify belief systems, coalitions, and sources of change.*
 - d. Emotion-Belief Analysis (Fullerton et al., 2022)



3. Scenario Testing Workshops

To facilitate the sharing of REMIT forecasting of policy outcomes, REMIT will offer 9 Scenario Testing Workshops (5 in-person and 4 on-line, which are repeats of the first four in-person ones). They are designed to help stakeholders predict policy outcomes through testing scenario descriptions. Scenarios should represent potential policy challenges or situations that the specific policy subsystem may encounter. By understanding the beliefs, values, and interests of key stakeholders and analyzing coalition dynamics, REMIT researchers can make more accurate predictions about the policy outcomes that are likely to emerge from the policy process. The ACF helps REMIT researchers to predict policy outcomes by identifying the factors that are most likely to influence policy change in the key technology policies under investigation.

Scenario planning is a technique used for anticipating alternative futures. It was originally founded by economic experts to predict large-scale changes. It is particularly convenient in circumstances with high uncertainty. The scenario testing method has already been applied successfully for EU policies. For example, the *Future of Europe White Paper* considered five scenarios for Europe 2025.⁶⁶

Organizing a technology policy scenario testing workshop involves specific considerations related to regulations, and their impact on technology. Workshop objectives include identifying vulnerabilities, validating assumptions, improving decision-making, and identifying scenarios that represent real-life situations or interactions within a policy subsystem. Make sure the scenarios cover a range of potential issues, risks, or challenges that may arise.

Workshops can include a mix of presentations, discussions, group exercises, and hands-on testing sessions. One idea is to develop a “Serious Game,”⁶⁷ which uses data for educational and training purposes and is easily digestible. Serious games offer play-and-competition exercises that allow data and information to become a “puzzle” for players to solve. Based on the knowledge gained from understanding the policy subsystem, the different coalitions within the policy subsystem, REMIT researchers can develop scenario descriptions that can be configured in a Serious Game.

The Serious Games Initiative, embarked on by the Wilson Center in Washington, D.C., has many examples of games that try to elevate public policy discourse. Topics for games include human migration, how machine learning works/the science behind AI, the ethics of artificial intelligence and the role that AI plays in society, understanding nutrition through cultural exploration, identifying disinformation, and understanding how disinformation spreads and understanding the complexities of the U.S. federal budget.

When developing the workshop, you should allocate sufficient time for each activity to ensure thorough exploration of scenarios. A group exercise could divide participants into small groups and assign each group specific scenarios to test or for each group to play a serious game. Encourage participants to think critically, explore various possibilities, and identify potential risks or issues. REMIT researchers provide guidance and support as needed. Emphasize collaboration and knowledge sharing among the groups. Small groups could then share their insights and lessons learned.

⁶⁶ European Commission. 2017. *White Paper on the Future of Europe: Reflections and Scenarios for the EU27 by 2025*. https://commission.europa.eu/system/files/2017-03/white_paper_on_the_future_of_europe_en.pdf

⁶⁷ See The Serious Games Initiative, at the Wilson Center, <https://www.wilsoncenter.org/issue/serious-games>



Steps to setting up a scenario testing workshop could include:

1. Develop scenario descriptions: Based on the knowledge gained from understanding the policy subsystem, the different coalitions within the policy subsystem, REMIT researchers develop scenario descriptions. Three to 5 scenarios are suggested. For example, Daniel Nohrstedt and Christopher M. Weible, suggest five sets of pathway scenarios linking crises with policy change or stagnation in their 2010 article.⁶⁸ Their distinction among the five sets of pathways originates from the different subsystem types, the proximity of the crises that they investigate, and the logic of coalition response.
2. Conduct Scenario Testing: Divide participants into small groups and assign each group specific scenarios to test. Encourage participants to think critically, explore various possibilities, and identify potential risks or issues. Provide guidance and support as needed. Emphasize collaboration and knowledge sharing among the groups.
3. Document and Analyze Results: Have participants document their findings, observations, and recommendations during the testing sessions. Allocate time for group presentations, where each group shares their insights and lessons learned.

⁶⁸ Nohrstedt, Daniel and Christopher M. Weible. 2010. The Logic of Policy Change after Crisis: Proximity and Subsystem Interaction. *Risk, Hazards & Crisis in Public Policy* 1 (2): 1-32.



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5. Annexes

5.1 Example of creating a Codebook for Media Content Analysis⁶⁹

Step-by-step instructions, by column, for entering data into code form (shared, for example, on Google Sheet).

1. **Coder Initials:** Enter your initials into code form.
2. **Article ID:** Create Article ID using the following format: Paper initial followed by number of article. *Example: CD-1 is Columbus Dispatch Article #1.*
3. **Article Title:** Enter article title as it appears in the article header.
4. **Article Source:** Enter article source (e.g. Denver Post).
5. **Article Author:** Enter article author(s) as the name appears in article. For multiple authors, separate by semi-colon. Example: Jane Smith; Joe Smith;
6. **Article Date:** Enter the date of the article using ISO 8601: (<http://www.w3.org/TR/NOTE-datetime>). E.g. YYYY-MM-DD or YYYY-MM.
7. **Article Org ID:** Enter the acronym for the actor's organizational ID. You must first populate the Actor Org Index sheet to use the pull-down menu.

This code will be a unique abbreviated label for each actor's organization. To construct the Specific Actor Org ID, use the first letter of each word in the title. If there is only one word, use the entire word.

****Multiple hats issue**** If an actor has more than one organizational affiliation, document each org ID in a different row.

8. **Actor Name:** Type the actor's full name. If no name is specified, write "Not Provided."
Important: EVERY actor mentioned in the article (with an organizational affiliation) must be coded, even if that actor has already been coded multiple times in other articles with the same position, or if the actor's role seems non-important or marginal. If the actor is named in the article, it is coded. Exception to this rule: if the actor is obviously not involved in the issue of hydraulic fracturing whatsoever. This could happen, for instance, where there are "subarticles" embedded in the main article (common in the Argentine media, where an article with multiple topics will be printed). So, for instance, the first part of the article will be about fracking, but then the second part will be about a religious celebration, or some other unrelated topic. Coders should only code the information that is relevant for our topic.

Individuals without organizational affiliation SHOULD NOT be coded

9. **Actor Org Name:** Select the Actor Org name from the pull-down menu. You must first populate the Actor Org index.

Actor Org Name is the exact name of the organization or person described in the article. Actors may be listed by their individual name (versus organization name) for Colorado and Ohio such as a state representative, federal representative, or an individual citizen. These categories of actors who are named as individuals may be different for Argentina and China, but the same logic should apply. That is, if an individual works for an

⁶⁹ Supplemental Appendix, Heikkila, et al. 2019.





organization that has a collective interest/position (e.g. an official working at the Colorado Governor’s office), then code the Actor Org Name as the organization that individual works for (“Colorado Governor’s Office”). If an individual is part of an organization, but there is no clearly identifiable “collective” interest/position (like a representative in Congress who comes with their own position), then code the individual as the Actor Org ID (“Federal Representative 1” NOT “Congress”).

****Multiple hats issue***** If an actor has more than one organizational affiliation, document each org name in a different row.

10. **Generic Actor Org Code:** Use the pull-down menu to select the org code. Make a note in column AD if you think a new code is needed for a particular instance. The generic actor org codes are populated from the shared Generic Actor Org Index sheet and are listed below. Note: national senators are to be coded as “federal government”

1. Local government (municipal or county)
2. Regional Government (e.g. special districts in the U.S., inter-municipal councils, interstate compacts; etc.)
3. State/Province Government
4. National Government
5. Environmental group or organization
6. Industry group or organization
7. University/research institution
8. Consultant
9. Media
10. Political parties
11. Tribes
12. International organization
13. Other (if the actor organization type does not fit within one of the categories above, use other and we will review at another point in time.
14. Foreign government
15. Citizen Group

11. **Fracking Stance:** Enter a 1 or a 0 for each column corresponding to the position on fracking of the actor being coded. There are four position codes: “pro-fracking,” “anti-fracking,” “neutral/mixed fracking” and “not specified”. **Note: an actor’s position must be obvious in the article through either a quote or a description of the action of the actor. If a position is not obvious, code it as ‘unspecified.’** See below for more details on criteria.

“Pro-fracking” (1=yes; 0=no) would be coded if the actor is quoted in the article as being supportive of fracking (or oil and gas development that uses fracking), or if the article describes the actor’s actions in a way that makes it clear that the actor is in support of fracking.

- For example, a “supportive” stance can come in the form of stating that fracking (or oil and gas development that uses fracking) is good or beneficial for the economy, jobs, energy security (or something else), or that the actor wants to see fracking developed or expanded, or it may be a quote that argues against someone who opposes fracking.



- Supportive “actions” can be identified if the article’s author talks about an actor engaging in drilling or fracking wells, investing in fracking businesses, collaborating with the oil and gas industry on researching fracking technologies, exploring a shale formation, taking actions that represent support (e.g. testifying in a public hearing that fracking is beneficial, safe, or “good” in some way), etc.
- Supportive actions or quotes can also be in relation to technology that is part of the overall oil and gas development process (not just fracking alone). *“Gas Company A was excited about the new water treatment technology being used at their wells” = pro-fracking;*
- Supportive stances could also be related to the regulatory framework. For example, if a government official is proposing policy related to encouraging fracking. However, coders will be careful not to infer a supportive position if no other information is provided about the stance of the actor or if the policy itself is mixed, for example if regulations are being adopted that would curb fracking. “Anti-fracking” (1=yes; 0=no) would be coded if the actor is quoted in the article as being in opposition to fracking (or oil and gas development that uses fracking), or if the article describes the actor’s actions in a way that makes it clear that the actor is opposed.
 - For example, an “opposing” quote could come in the form of stating that fracking is harmful to the environment, the public, the economy, climate change, etc., or that the actor wants to see fracking, or oil and gas development that uses fracking, banned, stopped, or suspended.
 - *“Environmentalist A argues that the company is ignoring the environmental impacts that the release of carbon into the air can cause, especially the process of fracking” = anti-fracking*
 - Opposing “actions” would be identified if the article’s author talks about an actor as trying to stop or limit fracking (e.g. by protesting at a public event, by testifying before Congress on problems related to fracking), or talks about the actor collaborating with other organizations that are taking these actions.

The “neutral/mixed” fracking receives an affirmative code (1=yes; 0=no) if the actor is reported with a mixed pro/anti position on fracking or if the actor is reported as being neutral on hydraulic fracturing.

- For example, if a policymaker is described or quoted as taking a position that “more evidence is needed about the costs and benefits before passing a law” then it is clear that the policymaker has a neutral position (rather than “no position”).
- Alternatively, if someone is quoted in one part of the article as saying “I’m concerned about the risks of fracking” and then later quoted as saying “but the economic benefits to our state are high,” then this person takes a mixed position.

The “not specified” code is coded affirmative (1= yes; 0=no) when the actor is not described as being pro, anti, or neutral/mixed on the issue.



- For example, this may be the case if the article talks about an actor in a story about hydraulic fracturing, but there is no clear indication that the position or action the actor takes is related to hydraulic fracturing or oil and gas development.
- As a more specific example: ***“Political Action Group A conducted a protest against Chevron’s unlawful use of their land when drilling exploratory wells without the community’s permission.” = unspecified for Political Action Group A, but pro for Chevron.*** The reason this would be unspecified for Political Action Group A is because it is not clear that the group opposes fracking or oil and gas per se. They are upset about the use of their land. (They may be supportive if they were compensated for the use of their land.) For Chevron, however, if the article makes note that the company is drilling a well on the land, then we would code them as “pro-fracking” because their actions demonstrate support of oil and gas development.

12. **Agreement/Disagreement:** Enter agreement or disagreement using Actor Org IDs generated previously. Leave blank if no observations of agree/disagree are present.

Actor Disagree/ Actor Agree: For each Actor Org ID, if there is a specific reference to another organization to whom they directly agree or disagree, code accordingly by listing the Actor Org ID of the Actor Disagree or Actor Agree. Most likely this will be in the same sentence and must be in the same article. Separate list of actors under Actor Disagree / Actor Agree by semi-colons.

- Agreement/disagreement is identified through the words or actions that are attributed to the actors in the article. For instance, Actor A might say: “We oppose the actions of Chevron” (disagreement evidenced by words) or Actor A might be described as “protesting the actions of Chevron” (also disagreement). Look for clear indications through words and actions of agreement or disagreement. *Don’t infer agreement or disagreement if you do not see the actions or words described in the article* (even if you know that they are in agreement or disagreement from another article or another context).
- Keep a fairly broad interpretation of agreement/disagreement. If the actors are both within the fracking/shale gas context, code even if it’s not exactly about fracking
- *Do not assume reciprocity of agreement. If Org A agrees with Org B, that does not necessarily mean that Org B is in agreement with Org A.*

An actor might disagree and agree with another one in the same article. For instance, the article might describe a conflictive relationship in the past that all of a sudden turns cooperative. In that case, code all the information. In other words, enter the name of the actor with whom the main actor is disagreeing, and then re-enter the former in the column for agreement.





E-I Index Calculations

Argentina (Agreement)

of Permutations: 5000
Random seed: 1513

Whole Network Results

		1 Freq	2 Pct	3 Possible	4 Density
1	Internal	152.000	0.434	13630.000	0.011
2	External	198.000	0.566	64490.000	0.003
3	E-I	46.000	0.131	50860.000	0.651

Max possible external ties: 64490.000
Max possible internal ties: 13630.000

E-I Index: 0.131
Expected value for E-I index is: 0.651

Max possible E-I given density & group sizes: 1.000
Min possible E-I given density & group sizes: -1.000

Re-scaled E-I index: 0.131

Permutation Test

Number of iterations = 5000

		1 Obs	2 Min	3 Avg	4 Max	5 SD	6 P >= Ob	7 P <= Ob
1	Internal	0.434	0.069	0.174	0.360	0.038	0.000	1.000
2	External	0.566	0.640	0.826	0.931	0.038	1.000	0.000
3	E-I	0.131	0.280	0.652	0.863	0.077	1.000	0.000

Argentina (Disagreement)

of Permutations: 5000
Random seed: 21614

Whole Network Results

		1 Freq	2 Pct	3 Possible	4 Density
1	Internal	14.000	0.099	13630.000	0.001
2	External	128.000	0.901	64490.000	0.002
3	E-I	114.000	0.803	50860.000	0.651

Max possible external ties: 64490.000
Max possible internal ties: 13630.000

E-I Index: 0.803
Expected value for E-I index is: 0.651

Max possible E-I given density & group sizes: 1.000
Min possible E-I given density & group sizes: -1.000

Re-scaled E-I index: 0.803





Permutation Test
 Number of iterations = 5000

		1	2	3	4	5	6	7
		Obs	Min	Avg	Max	SD	P >= Ob	P <= Ob
1	Internal	0.099	0.014	0.174	0.437	0.058	0.945	0.099
2	External	0.901	0.563	0.826	0.986	0.058	0.099	0.945
3	E-I	0.803	0.127	0.651	0.972	0.115	0.099	0.945

China (Agreement)

of Permutations: 5000
 Random seed: 30523

Whole Network Results

		1	2	3	4
		Freq	Pct	Possible	Density
1	Internal	36.000	0.563	1010.000	0.036
2	External	28.000	0.438	3546.000	0.008
3	E-I	-8.000	-0.125	2536.000	0.557

Max possible external ties: 3546.000
 Max possible internal ties: 1010.000

E-I Index: -0.125
 Expected value for E-I index is: 0.557

Max possible E-I given density & group sizes: 1.000
 Min possible E-I given density & group sizes: -1.000

Re-scaled E-I index: -0.125

Permutation Test
 Number of iterations = 5000

		1	2	3	4	5	6	7
		Obs	Min	Avg	Max	SD	P >= Ob	P <= Ob
1	Internal	0.563	0.000	0.222	0.625	0.083	0.001	1.000
2	External	0.438	0.375	0.778	1.000	0.083	1.000	0.001
3	E-I	-0.125	-0.250	0.556	1.000	0.167	1.000	0.001

United States (Agreement)

of Permutations: 5000
 Random seed: 5849

Whole Network Results

		1	2	3	4
		Freq	Pct	Possible	Density
1	Internal	4.000	0.200	4844.000	0.001
2	External	16.000	0.800	26662.000	0.001
3	E-I	12.000	0.600	21818.000	0.693

Max possible external ties: 26662.000





Max possible internal ties: 4844.000

E-I Index: 0.600

Expected value for E-I index is: 0.693

Max possible E-I given density & group sizes: 1.000

Min possible E-I given density & group sizes: -1.000

Re-scaled E-I index: 0.600

Permutation Test

Number of iterations = 5000

		1	2	3	4	5	6	7
		Obs	Min	Avg	Max	SD	P >= Ob	P <= Ob
1	Internal	0.200	0.000	0.153	0.700	0.115	0.468	0.804
2	External	0.800	0.300	0.847	1.000	0.115	0.804	0.468
3	E-I	0.600	-0.400	0.695	1.000	0.230	0.804	0.468

United States (Disagreement)

of Permutations:

5000

Random seed:

20227

Whole Network Results

		1	2	3	4
		Freq	Pct	Possible	Density
1	Internal	10.000	0.104	4844.000	0.002
2	External	86.000	0.896	26662.000	0.003
3	E-I	76.000	0.792	21818.000	0.693

Max possible external ties: 26662.000

Max possible internal ties: 4844.000

E-I Index: 0.792

Expected value for E-I index is: 0.693

Max possible E-I given density & group sizes: 1.000

Min possible E-I given density & group sizes: -1.000

Re-scaled E-I index: 0.792

Permutation Test

Number of iterations = 5000

		1	2	3	4	5	6	7
		Obs	Min	Avg	Max	SD	P >= Ob	P <= Ob
1	Internal	0.104	0.000	0.154	0.375	0.052	0.876	0.230
2	External	0.896	0.625	0.846	1.000	0.052	0.230	0.876
3	E-I	0.792	0.250	0.693	1.000	0.105	0.230	0.876



Interviews to Verify the Validity of Media Coding in China

To verify whether our media coding is reflective of the coalitional activities in China, we conducted in-person formal interviews of the key policy actors identified in our media coding. This allowed us to validate who the key actors are, who agrees with whom in the shale gas development, and what positions these actors take on shale gas development.

See below for the interview guidelines we used in the interview process:

Question 1: What are the themes/topics/issues on shale gas development in China and locally?

Question 2: Do people view these issues differently? /Are there different perspectives on these issues?

Question 3: How much consensus is there on these issues among people involved in shale gas development?

Question 4: Who are the major organizations or individuals involved in shale policies in the municipality?

Question 5: Do these organizations or individuals worry about these differences or do they embrace the differences and find a collaborative solution? Do these differences concern you?

Question 6: What are the venues through which they talk about these issues? (Prompt: formal meeting, forums, conferences, media, informal dinner, banquet, social media etc.) How do they discuss these issues?

Question 7: What government will do to solve the shale development issues? Have the government taken into account potential pollution from the shale development? What about other issues such as: well siting, land use, labor supply, pipeline construction, financing, and international collaboration.

Question 8: Given that Shell has backed out of shale development in Sichuan, but BP has entered the same area, what does government think of international collaboration on shale gas development?

Question 9: How typical do the issues faced in shale gas development compare to other issues (nuclear development, solid waste facility, or chemical factory), in terms of complexity of issues and level of support from local citizen?

Question 10: Is shale a good thing for China or a bad thing?

In the interview process, we added follow-up questions in addition to the above list for clarification purposes.

One coauthor of the study visited Chongqing in June 2017 to implement the above study design. We interviewed four governmental agencies (Oil and Gas Division under Department of Land Resource and Housing Authority in Chongqing Municipal Government; Department of Environmental Protection in Fuling District Government; Reform and Development Commission of Fuling District Government; Land Resource Management of Fuling District Government) and one oil company (Sinopec), which we identified as key actors in our media coding. We asked the above questions to see if these agencies are playing significant roles in the shale gas development, if any disagreement exists, and what other key players that were not identified in the media coding in the local shale gas development. We also communicated the findings of this study (the key actors and their agreement patterns) to the interviewees. Here are our findings through analyzing the interview notes:



1: These interviewees identified through media coding actually are key policy actors who are knowledgeable of shale gas development. This supports the validity of the media coding in identifying the core policy actors in the shale gas coalitions.

2: No additional actors were listed by the interviewees that are uniquely different from the media coding. This indicates the media content analysis is effective in identifying the boundary of the coalition members.

3: These key actors do identify a strong agreement among themselves in terms of how they perceive the cost and benefits of shale gas development. They work together frequently through joint meetings, informal communications and maintain a strong informal and formal relationships, as shown in the interview notes. This supports our finding in the media coding that actors share strong agreement with each other.

4: These actors identify environmental issues and harm, but they unanimously perceive the environmental issues through an economic development perspective. That is, the environmental issues can be compromised through economic compensations of local residents. They collectively solve environmental issues. This is not completely consistent with our media coding in identifying environmental risks. But the fact that local residents care more about economic development than environmental protection is consistent with our findings. Local environmental oppositions exist, but they are not key policy actors with strong policy influence, and more importantly, local residents' environmental concerns are used as a strategy to bargain for more economic compensation, as shown in the interview notes. Thus, the presence of local environmental concerns do not support the presence of an anti-shale gas coalition. This finding does not contradict with what we found in our media coding.

In addition to the above five interviews, we explored locally for additional policy actors that were not identified in our media coding but are highly relevant for the environmental issues in the local area. We identified and interviewed four most influential environmental NGOs in the area: 3 citizen activist environmental NGOs and 1 university based environmental NGO (largest in the city). None of them identify shale gas development as posing a threat to local environment, none of them are aware of the potential environmental harms and none of them have advocated for environmental issues around the shale gas issues. (Note that these NGOs are very active in local environmental advocacy in air pollution, water pollution and environmental education. They regularly collect citizen complaints and negotiate with companies and put pressure on local governments. But they have absolutely not engaged in any activities around shale gas.) This supports our findings in the media coding that there are no significant disagreement around shale gas in Chongqing, China.

In summary, even though China does not share the same level of media freedom as in the U.S. or Argentina, the findings of this study are not compromised with the use of media source.

