

AN ABSTRACT OF THE DISSERTATION OF

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Title: Macro Stories: Policy Process Dynamics of Presidential Environmental Ideas

Abstract approved: _____
Michael D. Jones

Public policy narratives and stories are often referenced by the media, politicians, advocacy groups, and across many disciplines in academia. Studies of social and political narratives support the notion narrative matters, but often lack systematic design capable of producing generalizable findings. The Narrative Policy Framework (NPF) has responded to this gap, but it lacks a consideration of idea attention and political institutions, for which it has drawn criticism. This dissertation develops unique ideas about the role of narratives in focusing attention and impacting policy choices in ways that allow for a consideration of institutional narratives. These newly developed theoretical ideas about narrative attention progressively shift the policy studies research agendas by opening up an avenue of inquiry into institutional narratives – their peculiarities and systematic dynamics.

Theory about narrative attention and institutions is utilized in a descriptive and explanatory study of U.S. Presidential State of the Union Speeches over the past 73 years. These speeches are content analyzed for environmental policy narratives and their components. Content coding and subsequent descriptive analysis supports ideas based in the literature: that

narratives should be present, narrative distribution should illustrate the established institutional dynamic of extreme periods of focus as well as periods of little or no attention to environmental policy, and lastly, environmental policy narratives would contain partisan trends. However, adding narrative to this analysis of institutional policy ideas finds two types of narratives, one emphasizing problems, called “story of fear,” and another emphasizing solutions, called “story of hope.” The finding of these story types emphasizes the value added of narrative in uncovering more detailed information about information emphasis than previous approaches could allow.

Finally, to test the proposition policy narratives impact policy agenda within policymaking institutions, time series analysis of climate change narratives and congressional hearings is conducted. Findings suggest narratives do impact agendas, and that stories of fear are the most effective at focusing Congressional attention. However, the analysis finds that stories of fear are only related to Congressional attention in times of unified government, when the Presidency and both houses of Congress are controlled by the same party. These findings suggest shared policy beliefs are necessary in order to support the intensive policymaking that problem-focused narratives likely engender and are likely necessary for impactful climate change policy. Future research should explore the efficacy of story types in other domains and contexts, as well as consider the roles of other important policy actors.

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Macro Stories: Policy Process Dynamics of Presidential Environmental Ideas

by
Holly L. Peterson

A DISSERTATION

Submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Doctor of Philosophy

Presented March 4, 2019
Commencement June 2019

Doctor of Philosophy dissertation of Holly L. Peterson presented on March 4, 2019

APPROVED:

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Director of the School of Public Policy

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ACKNOWLEDGEMENTS

This research was supported by the Oregon State University School of Public Policy and the Graduate School. My dissertation committee included my chair Michael D. Jones, as well as policy process experts Bryan D. Jones, Chris Koski, environmental policy experts Hilary Shaffer Boudet and Brent S. Steel, political science and methodological expert Alison Johnston, and Graduate Council Representative Daniel Lopez-Cevallos. I am very grateful for their time and attention.

My wonderful family, who fills me with joy, determination, and ambition, has supported this work since its inception. My mother Robin Crum's support, understanding, and insight was sustaining. Joseph Brown, my incredible partner, has spent many late nights editing my work and sharing his ideas and critiques. I am grateful for his assiduity, creativity, and intelligence. Henry Peterson-Brown, our baby, enlivens everything, and has made this journey extraordinary and pertinent.

"The dew will settle on our graves/ When all the world is green."

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General Introduction

Institutional policymaking is an important component to the policy process whose role is sometimes minimized in policy studies for emphasis on issue-based subsystems, which lump macro, national-level institutions and actors in with all others actively working on the issue (e.g., Shanahan et al., 2017, Sabatier & Jenkins-Smith, 1993). However, demarcating the role of macro-level institutional policymaking emphasizes an important causal mechanism of policy process dynamics: attention. This three-paper dissertation addresses the opportunity to explore attention and institutions in narrative studies by integrating ideas about the cognitive and systemic roles of narrative (e.g., Shanahan et al., 2017) and institutions (Baumgartner & Jones, 2009) in macro policymaking in Paper I, and then illustrates these ideas in two empirical studies of macro institutional policymaking in Papers II and III.

Paper I, “Political Information has Bright Colors: Narrative Attention Theory” (i.e., Peterson, 2018a) is the major theoretical component of the dissertation. It innovates an attention approach to narrative policy analysis drawing upon ideas and findings from recent approaches to policy process studies (e.g., Shanahan et al., 2017, Baumgartner & Jones, 2009, Jones 1994a, 1994b), allowing for exploration (Paper II) and investigation (Paper III) of institutional narratives. Paper I developed the role of narrative to shift issue-attention and reorder preferences in policy process dynamics. Narrative attention is posited to drive mobilizations of policy ideas, set agendas, and facilitate policy change or stasis. It was presented at the Midwest Political Science Association in Chicago, IL in 2017, where useful feedback was gathered on these ideas, including from Dr. Kuhika Gupta, who served as discussant for an early

draft. Anonymous peer reviewer feedback from *Policy Studies Journal*, where Paper I is now published, was incredibly helpful in the final version of this paper.

Paper II, “Narrative Policy Images: Exploring Presidential Environmental Policy Ideas” (i.e., Peterson, 2018b), developed and tested the idea of a narrative conceptualization of policy images proposed in Paper I. Paper II utilized narrative to investigate macro institutional ideas, providing a detailed approach that identified two new institutional narrative strategies, “stories of hope” and “stories of fear,” which emphasized particular attributes of policy issues relevant to beliefs about government. In addition to demonstrating fitness of narrative policy images, this exploratory analysis also demonstrated the power of narrative to capture theoretically relevant detailed information. Paper II was presented at the Midwest Political Science Association’s annual conference in Chicago, IL in 2018. As with Paper I, feedback on an early version was gathered and incorporated into this paper, including from Dr. Jonathan Pierce, who served as discussant for the paper.

Paper III tested the institutional agenda setting proposed in Paper I, utilizing story types identified in Paper II, in a narrative attention analysis of executive policy images about a contemporary environmental issue transcending issue arenas – climate change. Drawing upon policy studies and substantive literatures, Paper III tested the expectation that narrative attention, especially stories of fear, were related to macropolitical agenda setting. As stories of fear emphasize problems, they may encourage intensive policymaking, including information searches and elaborate or complex policy instruments, and are unsurprisingly related to higher levels of policymaking attention in periods of unified government (when actors share beliefs).

Findings from Paper III encourage research into the role of these story types in other issue areas, contexts like state and international venues, regarding additional policy actors like the media and lobbyists, and with larger data sets and more generalizable methods.

This dissertation emerges from a narrative tradition cognizant of the limitations of human information processing and proposes that a way people cognate narratively is by paying more attention to narrative information. This narrative focus is especially powerful in macro policymaking institutions like the US Presidency and Congress, where institutional characteristics amplify cognitive heuristics. These heuristics play a powerful role in facilitating policymaking process dynamics, in which the decisions macropolitical institutions make can have profound effects, sometimes destroying or reshaping entire subsystems. This research contributes to the understanding of these dynamics by addressing an opportunity to place narrative within institutional policymaking knowledge through the mechanism of narrative attention.

Paper 1: Political Information Has Bright Colors: Narrative Attention Theory

Abstract:

Attention plays an important role in driving policy process dynamics at multiple levels of analysis. Despite this, narrative policy process studies often center on the position that narrative is strategically used in subsystem debates because it alters policy beliefs and preferences. This paper explicates the relationship between narrative and attention in the policy process according to theory and empirical findings in the Punctuated Equilibrium Theory (PET) and Narrative Policy Framework (NPF) literatures, developing a theory of narrative attention. According to Narrative Attention Theory (NAT), narrative focuses attention at multiple levels of analysis in the policy process, but is most important to consider at the macro level, where preferences are most stable. In associating PET's notion of macro political institutions (e.g., executive branch) and NPF's macro level of analysis (institutions or culture), NAT offers new hypotheses about narrative dynamics, a PET macro institutional approach to NPF's macro level, and an NPF conceptualization of PET's policy image.

Bright Colors: Narrative in the Policy Process

The way we communicate our ideas to one another can have important implications. This is especially true for public policy ideas. In the influential work, *The Politics of Information* (2005), Jones and Baumgartner write:

Information has "color." It raises emotions. Political information has bright colors. The simple concept of "problem" adds color to "signal" or "information about a situation," and, indeed, much of politics involves getting people to see a "situation" as a "problem" by adding color.

Theory introduced in this paper argues that people add color to policy information by structuring their ideas as narratives. They rely on agential stories involving heroes, villains, and victims who grapple with communal resource challenges to help guide their attention to public problems and solutions. These stories, or narratives, appear throughout society (e.g., Safire, 2004), shaping people's thoughts, and thus have been studied by scholars because of their ability to do so (e.g., Lyotard 1979, Bruner, 1991).

This paper proposes yet another idea in the series of alterations to narrative social science theory over the last 40 years. These past developments have sometimes walked a fine line between narrative's interpretive strength and a desire for generalizable findings. At first, narrative studies largely existed in literatures concerned with interpretation instead of generalization. For many years, narrative was the exclusive territory of the interpretivists (Jones & McBeth, 2010). In the early 1990's, narrative made its way into policy studies. First, it came into interpretive and critical policy studies, then into policy analysis (e.g., Roe, 1994) and policy process studies (e.g., Stone, 1989). Motivated by dedication to scientific standards while drawing

upon interpretive claims about its utility, McBeth, Shanahan, and Jones developed a systematic way to study stories of actors affected or affecting policy issues, which they term “policy narratives” (Shanahan et al., 2017). This approach is called the narrative policy framework (NPF).

McBeth and Shanahan began in the interpretive tradition, analyzing policy marketers’ selling of policy stories to target communities (2004). A year later, with Jones, they published their first systematic empirical investigation of policy narratives (McBeth et al., 2005). A variety of publications followed, identifying case-relevant variables, positing strategies and narrative components, as well as exploring the role of beliefs in influencing people’s policy preferences. This period of work established McBeth et al.’s systematic narrative approach to policy process studies in the previous work of policy process scholars who both embrace normative approaches, like Stone (1989), and Schneider and Ingram (1993), and those more positive-orientated, like Sabatier and Jenkins-Smith (1993), and Baumgartner and Jones (1993). In 2010, the approach was more clearly placed within the policy process theory literature as a positivist-orientated framework (Jones & McBeth, 2010), and since then various revisions and updating of the NPF have been “canonized” by McBeth, Shanahan, and Jones largely within chapters of the *Theory of the Policy Process* edited volumes (2014, 2017), but also within their own edited volume *The Science of Stories* (2014). These changes have emphasized the NPF’s ability to conduct systematic research by integrating with various theories.

A benefit of the framework construction of the NPF is that it allows flexibility in application with different theories and models (e.g., Ostrom, 2007). Scholars have also suggested integration of these frameworks is helpful in combatting theoretical bias (e.g., Weible, 2014). The NPF draws strongly upon other policy theory in its development of its three levels of

analysis, but specifically regarding its “micro” (individual) and “meso” (group) levels of analysis (Shanahan et al. 2017). “Macro” (institutional or cultural) level theory remains undeveloped in existing NPF theory (Shanahan et al. 2017).

The micro level bases many of its claims in the work of Jones (2001) and Taber and Lodge (2006), among others; these authors theorize and/or demonstrate empirically cognitive processes which help explain how humans rely on and may be influenced by narratives and heuristic (cognitive short-cuts) images. The meso level of analysis draws strongly on Sabatier and Jenkins-Smith’s (1993) Advocacy Coalition Framework (ACF) for its theoretical development, arguing narratives are strategically deployed by competing groups to affect policy dynamics (e.g., Shanahan et al., 2011). Recently, the authors have further developed the NPF’s macro level by developing a hypothesis exploring the ACF notion of policy-oriented learning as a mechanism of policy change (Shanahan et al., 2017). However, to date developments within NPF theory have not described or defined its macro level of analysis.

This paper draws on the NPF-architects’ ideas that within the NPF’s defined macro level of analysis, variation in institutional narratives may help to explain institutional or cultural policy change (Shanahan et al., 2017; Shanahan et al., 2011). However, this approach breaks with the previous NPF reliance on ACF theory. Instead, this paper draws on Baumgartner and Jones’s (1993) punctuated equilibrium theory (PET) in explaining policy process dynamics. PET emphasizes some concepts absent in ACF, including a major theoretical role for “macropolitical institutions” (e.g., US Presidency, Congress, and the Courts), which has important implications for how the two approaches are structured.

Institutions Imply Attention

Where the ACF (Jenkins-Smith et al., 2017) envisions the policy processes as demarcated most usefully in subsystems (issue-based collections of engaged actors attempting to affect the policy process) and coalitions (competitive groups of directed and coordinated policy activity) within those subsystems, PET gives more consideration to macropolitical institutions. For PET, the policy process is also usefully demarcated by subsystems; however, drawing on previous work (Redford, 1969), PET takes the approach that politics are relatively stable within subsystems and, as a result, coalitions are generally better described as policy monopolies (a single coordinated group acting toward policy goals) because no competition exists (Baumgartner & Jones, 2010). Macropolitical institutions manage policymaking when subsystems become overwhelmed. When they do this, they have the power to reshape or destroy the subsystem concerned.

The ACF, on the other hand, emphasizes preference changes and coalition competition in subsystems. For both frameworks, most policy is made at the subsystem level; however, PET emphasizes the role of monopolies in maintaining the status quo and ACF emphasizes coalitional conflict in promoting change or stasis. PET also emphasizes the role conflict has in policy change, but instead of battles over coalition beliefs, the framework notes the role of mobilizations of ideas in activating macropolitical institutional interference in subsystem dynamics. This process relies not on alterations in beliefs but on attention shifts. For PET, attention to policy issues encapsulates both a focus on the issue as well as a selection of that issue's many possible dimensions (Jones & Baumgartner, 2005). Shifting the dimensions of a policy issue to which attention is paid can alter a policy actor's disposition toward the issue, for instance by

introducing new information, such as the presence of a recession (e.g., Sheingate, 2000).

Mobilizations of ideas may reorient institutional attention, bringing the policymaking prowess of macropolitical institutions to bear on subsystems.

Focusing on attention instead of belief or preference change as a primary driver of policy decisions has important consequences for explanations of policy process dynamics, including macro level policy change or stasis. Contrary to recent NPF theorizing (Shanahan et al., 2017; Shanahan et al., 2011), PET theorists do not see learning as a major contributor to policy change, although they posit it plays an important role in how governments become better at addressing policy problems over time (Jones & Baumgartner, 2005, p. 15) and note that learning has been demonstrated as a useful variable in subsystem-focused research (Jones & Baumgartner, 2009). PET theorists argue, at the macro policy level, preferences tend to be relatively stable (i.e., Baumgartner et al., 2017).

Instead of preference shifts, attention plays a crucial role in which policy designs and issues make it to the macropolitical agenda. Once on the agenda, macro policy change is more likely, especially if institutional attention to particular configurations of policy ideas (i.e., policy images in PET parlance) is strong and stable. Though PET theorists do not discount the notion policy actors may change their beliefs, they do not find it likely. Instead, policy entrepreneurs-actors who promote policy solutions (e.g., Kingdon, 1984)- mobilize around new ideas by strategically promoting competing policy images to new audiences, in new venues, garnering attention and support in order to replace pre-existing power structures (e.g., policy monopolies) and the images associated with them within the subsystem (Baumgartner & Jones, 2009).

Drawing upon recent propositions that narratives conceptualize policy images and likely increase attention of their audiences to specific ideas (Peterson & Jones, 2016), the following incorporates NPF and PET in order to explore policy process dynamics. First, relevant NPF and PET theory is reviewed. Next, major theoretical points from the two are synthesized to emphasize a role for narrative attention at multiple levels of policy process inquiry, culminating in the introduction of narrative attention theory (NAT). NAT develops hypotheses about the role of narrative in focusing individuals' attention, in shifting the focus of groups to new policy priorities, and in influencing national policy change or stasis. NAT is then extended to offer a way of analyzing policy narratives in macropolitical structures and also as a way of adding more specification to policy image research. Finally, an empirical example is briefly explored and extended to illustrate potential research projects.

The NPF

For the NPF, narrative is the primary heuristic by which people think and communicate. Based on this notion, and drawing upon previous literatures about narrative construction, the NPF identifies narrative components that construct policy narratives (Shanahan et al. 2017). Narrative components often include setting, characters, plot, and policy solution, as well as belief systems (e.g., ideology) and narrative strategies (e.g., conflict expansion, emphasizing opponent villainy and power), but may include other categories of information (Shanahan et al. 2017).

These components are analyzed at three levels identified in the introduction: micro, meso, and macro. Hypotheses at the micro level focus on the role of narrative in persuading individuals. Persuasive mechanisms include the use of characters, narrative breach (unexpected

narratives), narrative transportation (involvement in the story), congruence (doesn't challenge audience beliefs), and narrator trust (Jones et al., 2014). Meso level hypotheses concern competitive coalitional narrative strategies within subsystems – use of narrative strategies, coalitional cohesion, policy learning, media behavior, and framing (Shanahan et al., 2017). As mentioned briefly above, framework originators have recently altered a meso level hypothesis for the macro level, regarding the role of belief change and narrative variation in learning in institutional policy change (Shanahan et al., 2017).

Punctuated Equilibrium Theory's Attention Approach

For PET, people inefficiently rely on heuristics to cope with an otherwise overwhelming amount of information in their environment (e.g., Jones, 1994). Organizations and institutions reflect this heuristic thinking, sometimes overcoming shortfalls and other times amplifying them (Jones, 2001). Managing information heuristically produces periods of heightened change, called punctuations, in distributions of the attention and decision-making of people, organizations, and institutions (Jones & Baumgartner, 2005, Baumgartner & Jones, 2009). Rigid formal rules existing in some political institutions may exacerbate punctuations by limiting adaptation to new information (Jones & Baumgartner, 2005).

Political systems are composed of macropolitical institutions like the presidency to manage issues “serially” (one at a time) that overwhelm subsystems who process multiple issues, in “parallel” (Baumgartner et al., 2017). Macropolitical punctuations have the power to build or destroy policy subsystems (Baumgartner & Jones 2009). Subsystems are dominated by groups with shared policy ideas, called policy monopolies. Policy monopolies' shared ideas about how policy should be conducted are reflected in shared policy images. Policy images are mixes of

empirical and emotional information about relevant policy issues (Baumgartner et al., 2017) – a concept that is ambiguous because it involves uncertain information subject to different interpretations (Jones & Baumgartner, 2005, p. 6). During periods of incremental policymaking and subsystem equilibrium, PET expects to see stable monopolies and policy images dominate.

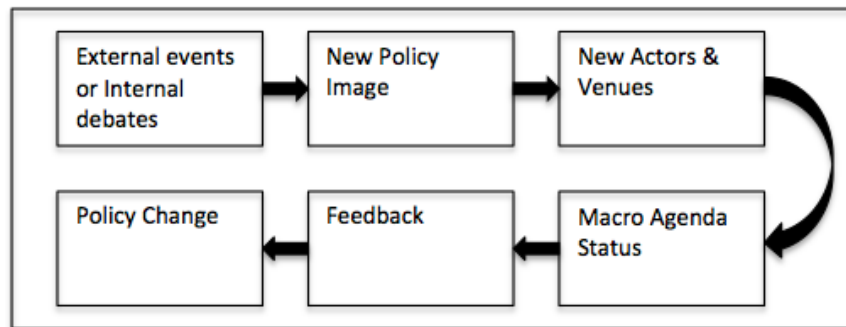
However, new policy images may be introduced to the system, challenging existing images on which monopolies and institutions depend. New images come from strong external signals, called focusing events, or because of internal debates (Jones & Baumgartner, 2005, p. 7). Baumgartner and Jones (2009) describe how disagreements about the safety of nuclear facilities among subsystem elites helped to shift a previously positive policy image, one of technical advancement and enthusiasm, to a negative one, focused on reactor safety, and emergency planning (pp. 257-262).

When new policy images challenge the status quo of subsystem power relations, dramatic change is possible. This is due to the institutional proclivity to resist change, favoring amplification of existing norms. As institutions resist acclimation to new norms, pressure builds, resulting in policy image mobilizations that can topple monopolies (Baumgartner & Jones, 2009). As pressure builds, when new policy images are being resisted by the subsystem, yet continue to gain support, new policy actors and institutional venues may become engaged by this new image. Policy venues are institutions or groups with the authority to make decisions concerning a particular policy issue (Baumgartner & Jones, 2009, p. 31).

As strength or popularity of the image increases, it may attract the attention of macro political institutions, gaining a spot on their agenda. If the image, once on the agenda, gains positive feedback from the system, it is likely to result in policy change (see Figure 1). Feedback

describes the policy system’s response to an image. Positive feedback is amplified, like exponential growth, as attention is drawn and subsequently draws more attention. Positive feedback increases so rapidly it seems to explode. Negative feedback resists this process, acting like a thermostat controlling the temperature in a given space (Baumgartner et al., 2017).

Figure 1. The Role of Policy Images in Facilitating Policy Change



The name of this framework—punctuated equilibrium theory—emphasizes the variable process of macro level policy change in most democracies. Much of the time, incremental policy change occurs as subsystems go about their regular business. Sometimes, this incremental process may be at equilibrium, where preferences are largely balanced and the monopoly is incrementally adapting to information from its environment. However, the characteristic of the monopoly actors and their institutions allowing them to resist new normative information in favor of their pre-existing preferences can lead to a toppling of subsystems as new actors and institutions become involved.

Theory of Information Processing

Jones and Baumgartner’s (2005, p. 33-34) theory of information processing articulates many of the inefficiencies and limitations of both individual and organizational processing of information. There are four stages of information processing: recognition of issues,

characterization/definition of problem attributes, generation of solutions, and choice. These stages are common to both individuals and organizations; however, they are realized differently. The individual's first stage is when attention is shifted to an issue. For the organization, this stage is termed "agenda setting," when an issue becomes one of a relatively small number under consideration (Jones & Baumgartner 2005, pp. 38-40). The second stage for individuals is where a problem is characterized by attributes, which receive weights of importance for decision-making. For organizations, this stage is referred to as "problem definition," which may involve a variety of factors, including actor strategy or organizational rules (Jones & Baumgartner, p. 40). The solution identification stage occurs once the attributes of the problem warranting action are articulated, and then alternatives addressing these attributes are considered. The more attributes under consideration, the more tradeoffs must be weighed. For organizations, this step involves proposal and debate, adding extra costs in terms of time and resources. In the final step, a choice is made.

Within this course of information processing, multiple limits to efficiency exist. For example, individuals serially process and even organizations have constraints on the amount and type of information they take in. Additionally, the criteria by which information is chosen for attention (termed "implicit index," Jones & Baumgartner, 2005, p. 57-60) by individuals and organizations alike is based on a variety of heuristics and biases that resist alteration. Formal rules may also challenge adaptability of the index. Heuristic conditions cause incremental and then punctuated responses in people, organizations, and institutions as policy actors shift attention to new policy images containing problem-attribute and solution information. These shifts in attention power policy process dynamics.

Preferences and Attention

NPF can host both theories of narrative persuasion and attention. Preference change may be more likely for individuals unaffiliated with political organizations and for non-macro subsystem actors than for macro actors (like those involved in national executive or legislative branches). For this reason, it may be easier to detect preference change at NPF's micro and meso levels of analysis. However, at the macro level of analysis, attention makes more sense as the primary narrative mechanism driving policy change (or maintaining stasis) because macro actors tend to have stable preferences (Baumgartner et al., 2017).

Macro actor preferences are likely more stable than other policy actors because of institutional constraints on their implicit indexing, including exposure to institutional biases and formal rules. Individuals not affiliated with political organizations will not be exposed to the same status quo biases and formal rules that subsystem actors, including macro actors, encounter. These individuals may therefore experience a more dynamic implicit-index. Such a dynamic index may allow exposure to potentially more adaptive policy images, responding more readily to environmental cues, and encourage individuals in adopting less stable policy preferences. Such preferences will change more incrementally, producing fewer punctuations in attention and decision-making.

Non-macro subsystem actors may also be more likely to adopt flexible policy preferences, due to fewer institutional bounds, than subsystem actors who are also members of macro political institutions, such as national level legislators like US Congresspersons. Non-macro subsystem actors' openness to alter their preferences will likely depend upon the characteristics of the organizations they work in as well as the general characteristics of their subsystem (e.g.,

Weible, 2008). Given the impacts of institutional bias and formal rules on information indexing, attention is likely an important mechanism of policy dynamics at each level of NPF analysis, but especially at the macro level.

Narrative Attention Theory

NPF need not be bound by its previous focus on preference change and beliefs as primary drivers of the policy process, especially given its relative inattention to the macro level of analysis, where attention is most important. However, attention strengthens each level of analysis, not just macro level theory, where the benefit is most apparent. Recall from the NPF section that micro level NPF is concerned with narrative components and mechanisms as agents of persuasion affecting preference shifts in individuals. Indeed, some empirical evidence suggests in certain contexts narrative may be involved with preference changes (e.g., Jones, 2010; 2014). However, narrative components and mechanisms may also help to shift attention (Peterson & Jones, 2016).

When information processing is restricted, narrative cognition will have important impacts on what information individuals and institutions pay attention to. The notion of narrative cognition paired with the theory of information processing (Jones & Baumgartner, 2005) implies narrative organization of policy norms may facilitate attention by organizing policy image information into packets designed for cognitive consumption (Peterson & Jones, 2016). These packets emphasize some problem attributes over others, influencing solution preferences by highlighting specific policy ideas over others, making them cognizant to the previously apathetic.

The power of narrative to focus attention to information gives it an important role at each level of analysis. At the micro level, narratives introduce new policy issues and attributes (Jones & Baumgartner, 2005) to individuals by drawing their attention to specific image designs. Narrative form may increase interest, focus, and memory in serial processors, thereby improving a narrative policy image's prospects of successful mobilization -- not by changing the minds of individuals, but by capturing the especially limited resource of a serial processor's attention. This is a potentially key point in understanding policy process dynamics as policy image mobilization relies on focusing the attention of individuals and venues within a subsystem.

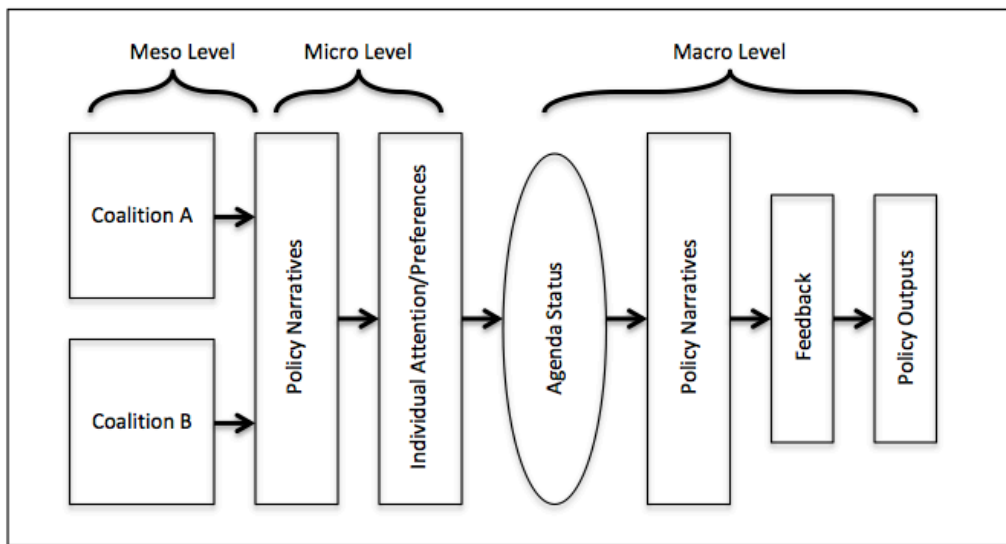
At the meso level, narratives are deployed strategically by competing coalitions or policy entrepreneurs as they debate, seeking to draw previously apathetic audiences and venues into the fray. In debate, they may proffer their policy image as an alternative to an existing image, or proceed in a non-confrontational manner (Baumgartner & Jones, 2009), marketing their image through the subsystem without acknowledging disagreements with the status quo. However, subsystems may include more people, venues, and possibly fewer institutional bounds. At this level of analysis, serial shifts (Jones, 1994), collective shifts of attention, may occur, as previously apathetic groups and venues focus on a new policy image. Strategic narrative use is likely a key component in manipulating serial shifts. As a result, narrative configuration of policy images and levels of use will likely be associated with a variety of strategic subsystem behavior, such as coalition stability, venue change, venue-shopping, and entrepreneur behavior (Peterson & Jones, 2016).

At the macro level, narratives are likely involved with the feedback process, facilitating or interfering with the move of a specific policy alternative-choice articulation (i.e., policy image)

from agenda item to policy output. Since feedback can work either to diminish or enhance the progress of a policy image once it has acquired agenda status, it is likely both narratives supporting and opposing an image that has reached the agenda will be visible in the feedback process. Narratives are likely capable of facilitating both positive and negative feedback depending upon their construction.

Indeed, strategic narrative activity is likely as involved in the feedback process as it is in subsystem mobilization attempts. For this reason, there may be similarities in strategies deployed by macro institutional actors during the feedback process with subsystem actors in the mobilization process. Narratives promoting change will likely try to draw attention in efforts to build the type of explosive attention that characterizes positive feedback. They will try to go “viral.” Narratives promoting the status quo may attempt to diffuse any attention-building by opponents, dampening down excitement to regular levels: “move along, nothing to see here, folks.” However, there will be important differences as well, as macro institutional actors and venues more strongly resist efforts of persuasion; instead, strategic efforts must be aimed toward institutional information and cognition. Figure 2 illustrates the posited role of narrative at these three levels of analysis.

Figure 2. Posited NPF Flow Chart



Adapted from Peterson & Jones 2016 and McBeth et al. 2014.

At each level, narrative coalesces issues, problem attributes, and solutions with emotional indicators, making it a natural way to think of policy images. At all three levels of analysis, narrative adds “color” to information, drawing attention to empirical and emotional information, structuring it for promotion of specific alternatives. There is some empirical suggestion for the idea that narrative directs audience attention to its particular form. For instance, Jones and Song (2014) found narrative affected the way individuals recalled information, producing recall according to narrative form.

To briefly summarize and restate, the idea that narrative facilitates attention to information issues and attributes has three hypothetical implications for empirical analysis. First, narrative focuses people’s attention on particular policy images of interest (Peterson & Jones, 2016). Second, subsystem narratives encourage serial shifts in attention (Peterson & Jones, 2016), pulling previously unengaged actors and institutions into the debate. The involvement of previously apathetic actors and institutions builds momentum for items to gain macro agenda

access. Finally, once agenda access is obtained, narrative encourages feedback, helping to either facilitate passage of policy or maintain the status quo, depending upon the narrative configuration and feedback type elicited (positive or negative). Following these three general hypotheses is the implication that narrative provides a mechanism by which to usefully measure policy images, as expressed by policy actors relying on heuristics to think and communicate with others (Peterson & Jones, 2016). Measuring policy images in this way allows for more specified analysis than previously imagined.

Hypothesis 1: Narrative focuses individual attention.

Hypothesis 2: Subsystem narratives encourage serial shifts in attention.

Hypothesis 3: Macropolitical policy narratives facilitate positive and negative feedback.

Narrative Policy Images

For PET, this approach provides specification of a key theoretical concept much of the literature, including empirical applications, has left amorphous or abstract. Narrative attention suggests policy images are often policy narratives. Since individuals' cognate narratively, the way they think and communicate about public policy is well captured with narrative analysis. Moreover, the form, content, and configuration of these policy narratives will have important system-wide implications for what images are attended to, spread through subsystems, and impact macro institutional policy dynamics. Using NPF as a frame to more specifically conceptualize the most important components of policy images allows for a more rigorous theoretical basis and systematic conceptualization of policy images. Indeed, the NPF as it exists today is flexible enough in its conceptualization of narrative components and mechanisms for

importation of other general (e.g., Stimpson 1991) and case-relevant theory (e.g., Jones & Peterson, 2016) into an NPF operationalization of the “policy image” variable¹.

Macro Level NPF

The NPF is not clear on what “macro” level institutions mean to its architects. This is likely intentional, to open the way for scholars to explore these ideas in various ways, a hallmark of framework construction. Narrative attention offers one explanation of what it might mean to explore narratives at an NPF macro level of policy-making, drawing upon PET’s designation of macro level institutions as powerful serial processors of issues transcending subsystem parallel politics.

For the NPF, this narrative attention approach develops alternative macro level theory. Currently, existing macro level theory integrates ACF’s theory of policy-oriented learning (Shanahan et al., 2017) and recommends qualitative and interpretive methods specifically for this level of analysis (e.g., Jones et al. 2014). The approach offered here challenges the underlying theoretical implication that preference shifts motivate policy dynamics at the macro institutional level. Instead, a narrative attention approach emphasizes the role of institutions within the policy process to argue attention is the primary driving force of policy dynamics at the macro level. Furthermore, the macro level NPF posited here allows for quantitative investigation.

Narrative attention measures of macropolitical institution narratives can be similar to those used in previous NPF studies at the micro and meso level of analysis that relied on quantitative analysis (e.g., McMorris et al. forthcoming, Zanocco & Jones 2018) as well as those

¹ The NPF, like many other policy process frameworks, has been criticized for this lack of standard specification of its variables (e.g., Weible et al. 2016).

employed in PET studies of budgets and attention. However, this approach does not preclude qualitative (e.g., Gray & Jones, 2016) and interpretive (Jones & Radaelli, 2016) mechanisms of exploration of the macro levels of analysis, such as exists in McBeth and Shanahan (2004) metaphorical exploration of national policy entrepreneur strategy employing a sales trope.

Studying narrative at the macro level using narrative attention could produce potentially important findings. Macro narrative analysis of political institutions could help to better identify the nature of policy images throughout history, given access to appropriate data. For instance, the Comparative Policy Agendas (CAP) project hosts various macro institutional data sets from multiple countries and some US states. Using narrative to explore these data could contribute to the literature with a systematic analysis that provides descriptions of actors, problems, and solutions amenable to secondary analysis. Such techniques could be capable of uncovering the emergence of new images and tracking their content and quantity over time to see if they go “viral” or peter out. Narratives captured in this manner could be further explored through techniques like time series or panel analysis to identify associations with other phenomena of interest like public opinion, congressional hearings, or State of the Union speeches.

For example, Peterson (2018) applies narrative attention in an exploration of presidential statements of environmental policy in State of the Union speeches. She codes over 70 years of State of the Union speech statements (n = 304) from the Comparative Agendas project for NPF narratives (n = 248) and narrative components (n = 650). Peterson finds support for the suggestion that NPF is a useful conceptualization of policy images, finding a high-degree of narratives within the statements, that narratives are used at similar amounts by both republican and democratic presidents, but also that Republicans and Democrats construct narratives using

components at significantly different rates. Her exploration identifies the emergence of a so-called “climate change narrative” that identifies climate change or global warming as a policy problem.

Though Peterson’s (2018) analysis does not directly test narrative attention hypotheses as articulated here, it does demonstrate the usefulness of integrating NPF and PET “macro” institutional theory for policy process analysis. Peterson demonstrates that narrative conceptualization of policy image captures patterns of potential interest (e.g., partisan narrative construction, an emergent narrative) that a less specific conceptualization of the policy image would not measure. The research also demonstrates the usefulness of PET in structuring narrative analysis of institution (a macro NPF study) to support more generalizable findings.

Further extensions of this type of research could explore associations between the emergence of new narratives, like the climate change narrative, and measures of attention shifts in subsystems, like regulations and advocacy group materials. This type of design would rely on hypothesis two, regarding serial shifts. Additionally, another extension could draw on hypothesis three, regarding feedback, and explore associations between narratives and attention levels in other macro institutions, like Congress. Testing of hypothesis one, regarding the focusing of individual attention, could rely on experimental survey design, as has frequently been used in NPF micro level studies (e.g., Zanoocco et al. 2017), or panel analysis and exposure to naturally occurring narratives, or perhaps explore exposure to strategic policy images disseminated on social media (e.g., Frenkel et al. 2018).

Conclusion

In the spirit of Sabatier (1999, 2007) and Sabatier and Weible's (2014) conception of policy process research, this work seeks to aid the investigation of policy process phenomena in diverse settings with comparable methods in hopes of expanding the usefulness of the literature. The NPF has largely moved away from narrative's interpretive foundation toward the more positive-minded policy process frameworks like ACF and PET. Following this progression, this research proposes to aid the development of NPF's macro level and PET's policy image through the identification of a causal mechanism previously overlooked in NPF theory: attention.

This oversight is evidenced by the literature's dominant approach to narrative analysis, the NPF's, exclusive focus on persuasion as a mechanism of policy dynamics throughout the policy process. However, narratives of persuasion are not likely to influence macro actors or well measure their activities because of their relatively stable policy preference (Baumgartner et al., 2017). Instead, narratives of attention are more likely received and deployed at this level of analysis, where organizational bounds bias actors toward the status quo. This paper offers a component to allow NPF to address narratives of attention in macropolitics and beyond with the work of Baumgartner and Jones (1993), who take a system-wide view of the policy process, including key variables that can aid NPF. PET's dependence on individual, organizational, and institutional characteristics of cognition in explaining the policy process are helpful in identifying the role of information and attention in narrative policy processes, inferring an important theoretical relationship: Narrative focuses attention.

This basic hypothesis has important implications for policy process analysis and for NPF and PET specifically. First, narrative attention theory calls into question NPF's dependence upon persuasion as its primary mechanism of policy process dynamics, suggesting limits to the

persuasion hypothesis and a system-wide role for attention as a mechanism of change. Second, articulation of narrative attention theory offers new hypotheses and provides an approach to macro level NPF studies. Lastly, narrative attention theory provides a specified and systematic approach to the study of policy images, which can aid in the production of generalizable research and expand the policy image research agenda.

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Paper II: Narrative Policy Images: Exploring Presidential Environmental Ideas

Abstract

Punctuated Equilibrium Theory's approach to understanding policy dynamics relies on tracking variation in policy images over time. But its conceptualization and subsequent empirical operationalizations of the policy image are problem-oriented and abstract, and therefore not often comparable across studies. Drawing on ideas about how narratives focus attention, this paper develops a "narrative policy image." The concept of a narrative policy image then is illustratively applied to explore and describe presidential environmental policy attention in State of the Union Addresses over 73 years. In this case of environmental macropolitical attention, narrative policy images identify new strategies, stories of "fear" and "hope," that may impact institutional attention shifts by encouraging both new attention and shifting extant preferences. This empirical illustration suggests a narrative policy image captures much of the same information as traditional policy image conceptions but also identifies greater detail, like context-cues imbedded in narrative strategies, while also allowing for comparable analysis of information framing.

A Macro-narrative Approach to Normalizing Policy Images

A strength and weakness of policy studies is the applicability of its theory. In this applied research domain, frameworks like the Narrative Policy Framework (NPF) and Punctuated Equilibrium Theory (PET) are collections of foci and variables capable of housing multiple theories and models (Ostrom, 2007). Their construction supports the flexibility often demanded by context-rich studies, simultaneously encouraging substantive and general research (Weible, 2017). As a result, these studies are frequently case-orientated (e.g., Cairney & Weible, 2017) and lacking holistic theory application (e.g., Weible et al., 2009; Pierce et al., 2014a; Pierce et al., 2014 b; Jones et al., 2016; Pierce et al., 2017). The literature hosts diverse designs and foci that complicate comparison across cases (Cairney & Weible, 2017). This flexibility is acknowledged in that frameworks are sometimes called “lenses” (Weible, 2017); but flexibility can translate into helter-skelter empirics making for risky knowledge-building: a potential lenses-on-lenses, or “turtles all the way down²” regressive problem shift (Lakatos, 1976).

Regressive problem shift is driven by the development of new theory to address unexplained phenomena due to theory failure, but could unintentionally develop for lack of clarity. Clear and specific empirics can guard against regressive problem shift by preventing “unexplained phenomena” due to empirical specification as opposed to actual theory failure. Policy process theory should balance case-relevance and generalizability to continue to facilitate a progressive shift in the literature, where expected findings offer fodder for future investigations – the expansion of theory’s explanatory power. This research seeks to improve

² An expression for the problem of infinite regress

theory about the process of public policymaking by offering a balanced conceptual approach to measuring policy issue attention: narrative.

PET explains the policy process in terms of policy issue attention: How people think about policy, the “policy image,” and how much attention policy images get determines the ebb and flow of democratic policymaking (Baumgartner & Jones, 2009). However, like many concepts in this literature, researchers often incompletely and incomparably specify policy images. By leveraging recent theory regarding the role of narrative in focusing and shifting attention (Peterson, 2018), this research explores whether the theoretical conception of narrative in the NPF (Shanahan et al., 2017) is a useful conceptualization of the policy image (Baumgartner & Jones, 2009), thereby improving theory.

Narrative would be a theoretical improvement if it clarifies the operationalization of the policy image, providing a generalizable method to capture problem-oriented detail – simultaneously improving accuracy while increasing comparability, facilitating more stable knowledge development and promoting continued progressive problem shift. In illustration of narrative policy image analysis, this study finds narrative is a useful approach in the case of US presidential environmental issue attention. In this case, analysis of narratives showed expected characteristics in the information it captured and in the distribution of narrative changes over many years, but it also uncovered new partisan environmental stories. These stories are narrative strategies potentially capable of reframing decision-making context to alter policy choices (e.g., Jones, 1994a, 1994b, Sheingate, 2000). These findings suggest narrative does improve the policy image concept – narrative can do many of the same things traditional approaches to the policy image do, plus provide extra information due to the comparatively high

level of detail and comparability. These findings are comparable to future analyses of other issues and may help better explain macropolitical US agenda-setting dynamics.

The following pages introduce narrative attention as a distinct explanation of narrative policy effects within the NPF that opens up intersections with theories of issue attention like PET (Peterson, 2018). These intersections clarify relationships between narratives and policy process dynamics by rectifying the roles of differing causal mechanisms, developing a potentially progressive research agenda extending from the conceptual marriage of narrative and attention. This agenda offers narrative studies a macropolitical approach to institutional analysis and attention studies an additional conceptual approach to the policy image. Both contributions support goals of generalizability and relevance for case, which is illustrated in a brief macro-level narrative policy image analysis of environmental policy in State of the Unions (SoU) between 1946 and 2018 in the second half of the paper.

Narrative Attention Theory: A Tale of Two Mechanisms

In traditional NPF research, narratives matter because they can change people's policy preferences. Empirical studies drawing on this framework have found evidence to support the idea narratives can change people's minds about policy issues (e.g., Jones, 2010), and even their behavior (McMorris et al., 2018). However, it is also likely that narratives may impact policy process dynamics by shifting people's attention (Peterson, 2018). This is a meaningful distinction in a policy system rife with information and ideas but limited in capacity to identify, characterize, examine, and act on policy issues (e.g., Jones, 1994a, 1994b, Jones & Baumgartner, 2005, Baumgartner & Jones, 2009).

In addition to limited information consumption and processing ability, some individuals are resistant to policy preference alterations, and some do not have policy preferences (e.g., Jones 1994a, 1994b, Baumgartner & Jones, 2009). Attention is likely an important narrative causal mechanism in the cases of those with firm preferences and those who have undeveloped preferences because it can both engage previously apathetic policy actors through attention shifts (Baumgartner & Jones, 2009) and reorder preferences (Jones, 1994a, 1994b). Narratives may shift and reorder existing preferences by providing a new information context to make choices within (e.g., Jones 1994a, 1994b). By highlighting new attributes of an issue considered in decision-making (e.g., Jones and Baumgartner, 2005), narratives may restructure choices, engaging extant preferences that had not previously been applied to a relevant policy issue (Jones, 1994a, 1994b). Narrative attention is likely capable of restructuring policy choice contexts, putting to work unengaged preferences to make ideas relevant to more people and venues.

The difference between persuasion and attention is an important theoretical distinction because it generates different hypotheses about policy process dynamics. In particular, a focus on attention facilitates a form of so-called “macro” analysis in narrative policy studies, the study of narrative in policymaking institutions (Shanahan et al., 2017). To date, the NPF has not fully generated theory for its macro level of analysis (Shanahan et al., 2017). It has traditionally drawn from other frameworks in specifying its theory about narratives and individuals (micro level of analysis) and policy subsystems (meso level of analysis). Following the NPF penchant for integrating extant theory to expand the capabilities of narrative analysis, narrative attention (Peterson, 2018) leverages theory about systematic attention dynamics (e.g., Jones 1994a,

1994b, Jones & Baumgartner, 2005, Baumgartner & Jones, 2009) to explain attention to policy issues in all levels of analysis, but especially in macro level policy process dynamics.

Policy Ideas that “Catch Fire”

PET and NPF both seek to explain the policy process in terms of how ideas interact within the policymaking ecosystem. For these approaches, both theoretically and empirically, policy ideas can have important consequences, including macropolitical policy change or stasis. The NPF approaches this explanation with the caveat that, in order to be most effective, the policy idea must have narrative form (e.g., Peterson & Jones, 2016, Jones & Peterson, 2017). This is because according to the NPF, people think and communicate in narratives. Narrative simplifies complexity, helping people make sense of overwhelming context-rich information. For the NPF, narrative is the primary mental heuristic, or cognitive shortcut, people use when they think about information. This is called narrative cognition. Since people cognate narratively, policy ideas with narrative form are easier for them to use than other kinds of information like lists, simple facts, or character-less phrases and statements.

Narrative construction has been demonstrated in some cases to influence individual conceptual organization (e.g., Berinsky & Kinder, 2006; Jones & Song, 2014) and policy preferences (e.g., Jones, 2010, 2014), as well as be systematically employed in advocacy group debates (e.g., McBeth et al., 2005, 2007; Smith-Walter et al., 2016, Merry, 2017). Narrative construction means policy ideas contain at least a character and a policy referent (Shanahan et al., 2017). For instance, President Trump’s recent tweet “The California Fire Fighters, FEMA and First Responders are amazing and very brave” (November 12th 2018) regarding the devastating November 2018 California wildfires includes three heroes: “Fire Fighters,” “FEMA,” and “First

Responders” and a policy referent to the California wildfires by the location “California” and the context of the heroes and date. Other theories do not theoretically develop such specifications regarding policy ideas, which are called policy images in PET parlance, but do explain their institutional dynamics, which NPF does not.

According to PET, heuristic information processing interacts with institutional characteristics to either support or dampen a policy image’s mobilization through the subsystem (issue area), to the macropolitical institutional agenda, through a feedback process, and in effecting either policy change or stasis (Baumgartner & Jones, 2009). A policy image must “catch fire” in order to make this kind of journey from the subsystem to the macro level of the policymaking system. Catching fire means the image mobilizes in an explosion of attention. Narrative likely plays an important role in facilitating policy images’ movement through the policy process. It may encourage individual attention to specific policy problems, shift attention in policy subsystems, and facilitates the necessary feedback in order to either alter or maintain status quo policy (Peterson, 2018). Narratives help ideas ignite.

Conceptualizing Policy Images

Still treated abstractly in the literature, policy images are often defined in terms of their impacts or associations instead of attributes, making them conceptually amorphous, difficult to compare, and lacking potentially important information. Baumgartner and Jones (2009) define policy images as “public understandings of policy problems” and “how a policy is understood and discussed,” note that they contain both empirical and evaluative components, and imply they are often created by specialists who distill and simplify complex information for easy consumption by others (pp. 25-26). The evaluative components contain emotive appeals (2009).

Additionally, the context-cues imbedded in these images are powerful, capable of calling cognitive frames that activate potentially competing preferences and inspiring changes in policy choices while preferences remain stable, known as “choice reversals” (Jones, 1994a, 1994b). For example, a popular policy image in the 1960’s and 1970’s was the need to mitigate pollution. When President Johnson evaluates the issue of pollution in his 1966 SoU, he shames those involved, embedding the evaluative stance in the context of a problem about our national heritage: “Of all the reckless devastations of our national heritage, none is really more shameful than the continued poisoning of our rivers and our air.”

Policy images interact with institutions like the executive branch in particular ways based on various characteristics that structure, regulate, and alter the public policy process. Some institutional venues are more open to particular images (Baumgartner & Jones, 2009). For instance, the presidency is generally accommodating to environmental issues (e.g., Soden, 1999, Daynes & Sussman, 2010, Vig, 2016). But some institutions are limited in their ability to consider specific images, such as Congress regarding climate change mitigation ideas (e.g., Fahey & Pralle, 2016), while others are officially constrained (e.g., Pralle, 2003), such as local governments who are prevented from regulating hydraulic fracturing by state law (e.g., Heikkila & Weible, 2017). Images are sometimes strategically manipulated, for instance to keep out unwanted interests or to make a problem amenable to government action (Baumgartner & Jones 2009, p. 26-28). For example, President Nixon made a case for government regulation of pollution in his 1970 SoU: “We should begin now to treat them [water, air] as scarce resources, which we are no freer to contaminate than we are free to throw garbage in our neighbor’s yard.”

Empirical studies involving policy images tend to rely on abstract and case-specific conceptualizations of the theoretical construct “policy image.” Many do not utilize the term “policy image” and instead point to the PET explanation of the term (Baumgartner & Jones, 2009), or Jones and Baumgartner’s (2005) theory of information processing to identify concepts about how policy is understood, such as policy issue, problem definition, and concepts similar to “policy image” (e.g., Sheingate, 2000, Jeon & Haider-Markel, 2001, Nowlin, 2016). Studies establish policy images inductively (e.g., Wendon, 1998, Tzfadia et al., 2010, Flynn, 2011, Nowlin, 2016), deductively for case design (e.g., Maurer & Parks, 2007, Vaughan & Arsneault, 2008), and deductively from previous literature (e.g., Sheingate, 2000, Jeon & Haider-Markel 2001, Stephenson, 2012). They often rely on divergent operationalizations as well.

Wendon (1998) uses qualitative analysis of interviews to establish EU social policy images and Nowlin (2016) conducts quantitative analysis of text content to identify US nuclear waste problem attributes. Maurer and Parks (2007) envision policy images as corresponding to the EU policy process and Vaughan and Arsneault (2008) use organizational mentions as proxies for policy images. Mondou et al. (2014) use the classic PET approach of classifying images according to the valence of statements. They code congressional hearings in their investigation of US biofuel policy as negative, neutral, or positive. Derivation of image valence speaks to PET’s conception of critical and positive mobilizations. Interpreting whether an image is supportive or destructive toward a subsystem’s power balance requires specialized knowledge from the researcher about themes that shift over time.

Like policy studies generally, policy image studies have a tendency to focus only on the part of the theory most useful for a case or to utilize a highly summarized conceptualization of

the variable. This is problematic as it may increase opportunities to miss relevant information that may not be captured in the previous literature or is not immediately apparent, which may encourage regressive problem shift. For instance, an approach to capturing policy images like organizational mentions (e.g., Vaughan & Arsneault, 2008) could potentially ignore other relevant aspects of policy images, like problem definition, while also overly-summarizing information of import, like policy actor involvement. This information is especially important considering the ability of images to alter the choice context of decisions, reframing them in ways making potentially diverse preferences newly relevant (Jones, 1994a, 1994b). Image components capable of reframing information may be useful in similar contexts or help to shed light on the particulars of reframing attributes. Counting organizational mentions would likely miss this important contextual information. Additionally, this approach may miss the presence of competing images. Narrative offers a solution to this problem by integrating a more specific and generalized approach to identifying reliable parts of policy images.

Narrative Policy Images

The NPF specifies constituent parts of narrative, called narrative components, which can be used as an approach to systematically gather policy images. Narrative components include elements like character, setting, plot, and moral of the story, which refer to the generalizable parts that structure narratives, and content like beliefs and strategies, which are context-specific. However, narrative content can be transformed through additional interpretation, categorization, or measurement for more generalizability, like using political party to generalize policy beliefs. Data can be gathered and analyzed for each narrative component constituting the policy image under study and considered both individually and in tandem with other

components that make up the policy image since NPF policy narratives may contain as few components as a single character and policy referent. NPF theory and studies have suggested the presence of other components including frames (Crow & Lawlor, 2016), evidence (Smith-Walter et al., 2016), beneficiaries (Weible et al., 2016), and others.

NPF characters include heroes, villains, victims, and beneficiaries. Heroes address the problem, villains cause it, victims are harmed, and beneficiaries benefit from the process. The morals of the story are policy solutions. Setting captures subsystem policy-relevant information. Depending upon how it is operationalized, setting might capture or disseminate geographical, legal, or other context-specific information. Plot provides a temporal line of reasoning in which the other components interact. For example, plot has been explored in the past through Deborah Stone's (1989) storylines (McBeth et al., 2014).

Beliefs may be operationalized in a variety of ways, including political party (e.g., Lybecker et al., 2013), Cultural Theory (McMorris et al., 2018), and Cultural Theory/Cognition (Zanocco & Jones, 2018). Strategies often refer to potentially persuasive rhetorical content previously identified in the agenda-setting or policy process literature or that emerges from descriptive NPF analysis (e.g., Shanahan et al., 2013). Strategies frame policy information for target audiences. Examples include cost and benefits framing (Gupta et al., 2016), exaggeration of malice or beneficence intent (devil or angel shift) (Shanahan et al., 2013), and episodic (human-interest) framing (Crow & Lawlor, 2016). Strategies are likely tied to beliefs because beliefs define how different groups will make sense of narrative content. For instance, Republicans and Democrats likely view climate change information very differently. An NPF

conceptualization of the policy image contains characters and policy referents and may contain other information as deemed useful for the study of interest.

Policy images contain empirical and evaluative information, which can cue emotional responses in people (Jones & Baumgartner, 2005), and contextual information capable of engaging previously unengaged preferences (e.g., Jones, 1994a, 1994b). Narrative is an especially good way to capture this information because narrative components embed contextual and empirical information in evaluative categories that cue emotional responses in people. For example, the hero of a story provides empirical information about a major policy actor, but it also includes evaluative implications- that the actor is normatively just- and studies have shown people sometimes have positive affect for the hero character aligning with their beliefs, called “the hero effect” (e.g., Shanahan et al., 2017). Similarly, victim, villain, and beneficiary components will identify policy-relevant actors, imply their normative role, provide case relevant context, and suggest emotional responses in audiences. The policy solution evaluates an empirically proposed course of action as normative.

Other narrative components have less defined conceptualizations, such as plot and setting, and their ability to capture contextual, empirical, evaluative, and emotional information will be dependent upon the operationalization and study. Narrative content like beliefs and strategies likely sends strong evaluative signals to policy image consumers about how the policy image relates to their group identity, like whether the message is for a Democrat or Republican. These strategies also likely capture the context-cues capable of reframing decision-making so new preferences may inform policy choices (e.g., Jones, 1994a, 1994b, Sheingate, 2000). For instance, a Republican promoting a pollution policy solution may simultaneously engage

audience preferences to address a public problem like air pollution and a preference for as limited government as possible. Identity protection is a strong motivating factor regarding the acceptance of policy ideas (e.g., Mcright & Dunlap, 2013), one that persists despite increased level of education or knowledge regarding the policy domain (e.g., Kahan et al., 2007), and may be becoming more relevant as party polarization grows in the US (e.g., Lee, 2015). Indeed, targeting one group with the beliefs of another can “boomerang” by reinforcing ideas targeted for alteration (e.g., Byrne & Hart, 2016), a technique that can be manipulated by an unreliable narrator or perhaps in satire to intentionally reinforce existing ideas.

In addition to offering more policy image relevant detail, like strategies, narrative policy image conceptualization offers the benefit of comparability, though challenges to comparability still exist even within a more specified narrative policy image. In general, NPF narrative components are abstractly comparable, although specific cases and studies will examine components not present in others. For example, many NPF cases do not include plot or setting (e.g., Crow et al., 2016, McBeth et al., 2014), and some include other components like evidence (e.g., Smith-Walter et al., 2016) and strategic problem-framing called “problem surfing” (McBeth et al., 2014). Plot and setting may be difficult to identify reliably across many cases and evidence may not be present or an important component in many policy images. Additionally, these components may contain less evaluative characteristics depending upon their specific conceptualization.

Some narrative components, especially narrative content like beliefs and strategies, may be operationalized in ways that do not make sense to compare. For example, some NPF studies could include New Ecological Paradigm (NEP) (Dunlap, 2008) to identify beliefs embedded within

policy images because they will resonate more strongly with certain groups in subsystems of interest. However, it may not make sense to use the NEP to explore beliefs in policy images about tax reform or abortion, which may not include many expressions of environmental values. Additionally, one study might consider heroes only people capable of agential action (i.e., Weible et al., 2016), while others may include any data referred to as a hero within the construction of the narrative, including symbols and animals (e.g., Smith-Walter et al., 2016). While you might generally be able to talk about similarities and differences in heroes between two studies operationalizing heroes differently, you cannot compare the findings well because they include different data.

Although not all studies utilizing an NPF-conceptualized policy image will be directly comparable, using narrative to explore policy images will increase the ability to identify general trends and issues across cases, something that is currently a challenging endeavor because of the different ways policy images are conceptualized and operationalized. This challenge has also been noted in the framing literature more generally (Chong & Druckman, 2007), where, for example, environmental policy is thought to be especially relevant because of the great role framing has in part due to polarization (e.g., Nisbet, 2009, Lakoff, 2010, Volkel & Feinberg, 2016) and its ability to encourage action (e.g., Bardwell, 1991, Bortree et al., 2011, Weathers et al., 2017, Jones & Peterson, 2017). NPF may reduce these differences while still allowing for research to explore important issue-specific contextual factors, like policy problems and solutions (e.g., Maibach et al., 2010, Nisbet, 2011, Myer et al., 2012), information-richness (e.g., Druckman & Lupia, 2017), or perceptions of risk and control (e.g., Pidgeon & Fischhoff 2011), that have been identified in previous literature.

Studies using an NPF conceptualization can discuss the evaluative and empirical information captured by characters, policy solutions, and other items across studies, as well as test for inferred emotional response (e.g., Pierce & Hillyard, 2018). Additionally, an NPF conceptualization of a policy image offers a balance of the benefits of generalizability with added detail capturing case relevance lacking in the traditional ways of exploring policy images. To demonstrate this notion, this study next operationalizes narrative policy images, drawing on the conception of narrative provided by narrative attention.

In the following illustrative case, 73 years of SoU environmental policy statements are content analyzed for policy images using NPF narrative components. SoU environmental policy statements provide a clear illustration of the value-added of narrative because in the case of this data, the narrator, the President, is well situated institutionally to develop agenda-setting policy images in this issue area (Vig & Kraft, 2016, Daynes & Sussman, 2009, Soden, 1999). The President is considered the primary setter of the macro policy agenda (e.g., Cohen, 1999, Tsebelis, 2002, Barrett, 2004, Baumgartner & Jones, 2009,). Their SoU address impact media (e.g., Wanta et al. 1989), the public (e.g., Barbaras, 2008), and Congress (e.g., Baumgartner & Jones, 2009, Lovett, Bevan, & Baumgartner, 2015). Since the SoU are rhetorical policy artifacts directed at encouraging agenda attention in Congress (e.g., Teten, 2006, Baumgartner & Jones, 2009, Lovett, Bevan, & Baumgartner, 2015), this data likely contains images strategically constructed to draw attention (e.g., Shogan & Neale, 2012), which means narratives should be present (e.g., Peterson & Jones, 2016). The narrative policy images resulting from this analysis are explored, illustrating the value-added of narrative to the policy image –comparability, reliability, generalization– and case-relevant detail capable of identifying new findings, such as

narrative attention techniques like context-framing and encouraging a continued progressive problem shift in the literature.

Empirical Illustration: Environmental Stories in State of the Unions

This exploration of SoU environmental narrative policy images begins with three general expectations. The first is that narrative policy images will saturate SoU environmental policy statements. This is because past studies have found narratives are strategically used by groups trying to affect policy (e.g., Shanahan et al., 2013, Smith-Walter et al., 2016). Since the SoU is a primary artifact relating the executive branch's policymaking agenda (e.g., Baumgartner & Jones, 2009, Bevan, Lovett & Baumgartner, 2015) and much work goes into its crafting (Shogan & Neale, 2012), it seems reasonable to expect rhetorical strategy like narrative is embedded within the information it communicates. Since this proposition is exploratory, a reasonable expectation for narrative saturation is more than 50% of statements containing narratives. This percentage would demonstrate the statements are narratives more often than not. Second, since SoU are a major agenda setting artifact of macro politics in the US, levels of attention to narrative policy images should be largely incremental with few periods of heightened attention. This expectation is based in many years of PET research (e.g., Baumgartner, Jones, & Mortensen, 2017) supporting the primary PET thesis that the interaction of heuristic information processing and institutional status-quo bias on policymaking is many periods of incremental or no change and a few periods of rapid or "punctuated" change as the system corrects for the bias³. In addition to

³ Sometimes these mobilizations are driven by shocking external events, called focusing events. For examples of major environmental focusing events, see Appendix 4.

these two expectations regarding traditional PET policy image dynamics is a third targeting the value added of narrative detail.

The third expectation is that since macropolitical environmental policymaking in the US is characterized by partisanship, narrative attention strategies will likely differ by party-based beliefs. Past NPF studies (see Shanahan et al., 2017) have found narrative strategies often differ between competing groups of coordinated policy actors who share beliefs. Though the President is a single person at any one point in time, the agenda of the executive branch reflects the policy priorities of many associated policy elites, which are often partisan regarding the environment. In this case, macropolitical Republican and Democrat policy actors largely share beliefs about environmental policy and are coordinated in their efforts. This is especially true since the modern era of the environmental policy movement, beginning in the 1960's, with the primary exception of President Richard Nixon, who led the development of the US's most foundational federal environmental policies.

An NPF Macropolitical “Codebook”

Environmental statements within 1946 through 2018 SoUs were obtained from the Comparative Policy Agendas (CAP) project (comparativeagendas.net) and each was coded using the NPF conceptualizations discussed previously for heroes, villains, victims, beneficiaries, policy problem, and policy solution, as well as the PET conceptualization for attention valence. CAP researchers collected the 73 SoUs and coded the 304 environmental statements within them using a detailed policy topics codebook that has been in use for many years, whose content is used in many studies, and has been tested to a 95% intercoder reliability (Hearings, 2018). This date range was chosen to reflect policy patterns following the Second World War when the

modern environmental movement was getting started. Next, the 304 environmental policy statements were subjected to narrative and attention valence content analysis.

Deductive narrative coding was first conducted for presence of code and then relevant text was inductively grouped into type. For example, when coding for policy problem, in the statement “We will seek legal power to prevent pollution of our air and water before it happens” (Johnson, 1965), “we” was identified as a hero code, “legal power to prevent” was identified as a solution code, and “pollution of our air and water” was identified as a problem. The statement was coded as having critical valence. Later, the coded texts were inductively grouped into similar categories. In this example, the hero code, “we,” was used so often it became its own category, the solution “legal power to prevent” was grouped into the category “protect the environment,” and the problem code “pollution of our air and water” was coded as “pollution.”

The codebook spells out specific guidelines for collection of content data. Heroes are human actors presented as responsible for aiding a problem. Villains are human actors presented as responsible for a problem. Victims are human actors presented as being harmed. Beneficiaries are human actors presented as benefiting⁴. Setting is conceptualized by identification of the policy problem, which provides the basis for the issue (Stone, 1989), is an integral part of the policy image (Baumgartner & Jones, 2009), influences which policy solutions may fall under consideration (Jones, 2017), and conveys important information about the policy environment and setting (Mintrom & Luetjens, 2017).

Operationally, policy problems are issues presented as causing harm. Although they are connected to solutions, they do not dictate them (Baumgartner & Jones, 2005). Morals of the

⁴ For this study, character codes may be applied to groups of human actors, like organizations.

story are policy solutions, or proposals for public policy action, including abstract calls-to-action⁵, such as “...clean up our rivers...” and specific policy proposals like “...establish the Environmental Protection Agency...” Following the PET conception of attention valence, the statements were coded as critical or supportive of the status quo. The codebook operationalizes these categories for data collection (Appendix 1).

Intercoder reliability testing was conducted on 200 (66%) of the 304 environmental policy statements for both presence of code (e.g., solution) and type of code (e.g., cap-and-trade bill). An additional coder underwent training and applied the codebook in Appendix 1 to a random selection of environmental policy statements. All content categories met the minimum reliability threshold of 90% agreement and the .61 threshold for substantial Cohen’s kappa statistic⁶. Intercoder reliability statistics are presented in Table 1. The narrative information collected and tested in this process was then explored for presence of narratives, distribution of changes in narratives over time, and partisan trends.

Table 1. Intercoder Reliability for Policy Attention & Narrative Content Categories

Variable	Percent Agreement	Cohen’s Kappa	Krippendorff’s Alpha	Disagreements
Valence	90%	0.84	0.84	20
Hero	91%	0.81	0.81	18
Villain	95%	0.75	0.75	10
Beneficiary	93%	0.72	0.73	15
Victim	91%	0.64	0.64	18
Setting	92%	0.83	0.83	17
Moral	90%	0.75	0.75	20

⁵ Policy solutions likely involve symbolic politics, which may help to focus policymaking attention to specific ideas while limiting actual substantive policymaking.

⁶ The .70 threshold for Krippendorff’s Alpha was not met for the victim code, which had a .65 Krippendorff’s Alpha. This was likely driven by lower occurrence of the code within the data.

Environmental Policy Narrative Images

1) Narrative Policy Image Saturation

Narrative analysis of the 304 environmental statements present in SoU from 1946-2018 identified 248 narratives (56 non-narratives), meaning about 82 percent of the statements were narratives by NPF standards. This well exceeds the exploratory expectation of 50 percent. Table 2 summarizes narrative codes and presents Chi-squared significance and Phi effect size test comparing the presence of narrative components between narratives and non-narratives. In addition to no characters, non-narratives have significantly fewer of the other content codes. Nearly forty percent of these environmental policy non-narratives (n=56) contain solutions (n=22), 38% contain problems (n=21); however, 61% (n=34) contained an attention valence code, indicating that the more abstract valence codes capture more content than narratives.

Valence codes are significantly associated with narratives, indicating that although they appear within non-narratives in non-trivial amounts, they are related to narratives. An example of a non-narrative with valence is “The price tag on pollution is too high,” from President Nixon’s 1970 SoU. This non-narrative was coded as having a critical valence. This non-narrative illustrates how although non-narratives are likely less influential than narratives, they still contain interesting information. This analysis supports Expectation 1 that narratives are present in most statements and suggests that generally narratives may capture most valence, policy solution, and problem data as well.

Table 2. Content Codes in Narratives, Non-Narratives, & Total Statements in State of the Union Speeches, 1946-2015

Code	Narrative	Non-Narrative	Total	χ^2	ϕ
Valence	220	34	254	23.10***	0.28
Solution	207	22	229	45.10***	0.39
Problem	129	21	150	3.35	0.07
Hero	179	0	179	96.16***	0.56
Beneficiary	67	0	67	18.98***	0.25
Villain	38	0	38	9.59**	0.18
Victim	40	0	40	10.17**	0.18

Chi-square calculates the independence of the distributions of each code count for democrat and republican statements. Valence here refers to statements coded as having valence or not, *** indicates $p > 0.001$, ** indicates $p > 0.010$, and * indicates $p > 0.05$. Phi effect sizes are interpreted as approximately 0.10 = small effect, 0.30 = medium effect, 0.50 = large effect

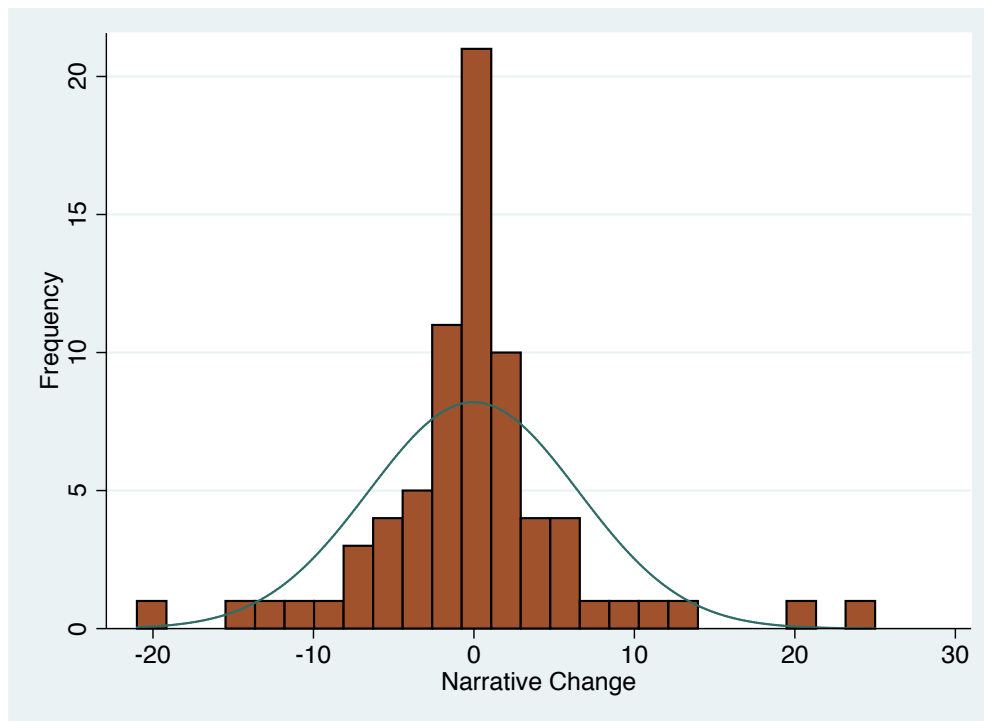
2) Distribution of Narrative Policy Images

If narrative policy images reveal the same dynamics PET policy images do, changes in them over time should follow a leptokurtic distribution. This is because macropolitical attention is largely at the status quo, or in terms of the distribution of changes, zero. PET “punctuations” or periods of heightened attention are indicated by outliers, or “black swans,” on the x-axis. The leptokurtic distribution has a higher kurtosis value than the normal distribution, meaning more values are distributed around the mean. Leptokurtic distributions also have “fat tails,” meaning they include extreme values on the x-axis. The resulting distribution looks taller in the middle and has longer, skinnier tails than the normal distribution, which resembles a bell.

Figure 3 is a histogram of the yearly changes in number of SoU environmental narrative images analyzed in this research. The x-axis is the numerical change from one year to the next of narratives and the y-axis is the frequency of that numerical change in the dataset. Overlaid on the histogram is a normal curve in black as a visual reference for comparison. The distribution

visually appears leptokurtic (more concentrated around the mean), and its kurtosis value of 7.28 identifies it as such⁷. The strong central peak indicates a great number of no changes in amount of narratives. The weak shoulders of the distribution indicate fewer than normal moderate changes in number of narrative images annually, and the long tails indicate more than normal radical departures from the previous year's amount of policy images for each. This distribution clearly diverges from the normal curve in a manner corresponding with PET expectation of policy image activity over long periods within a democratic political institution like the presidency (Baumgartner & Jones, 2009), supporting Expectation 2.

Figure 3. Distribution of Annual Narrative Changes of Environmental Narrative Policy Images Narratives in State of the Union Speeches, 1946-2018

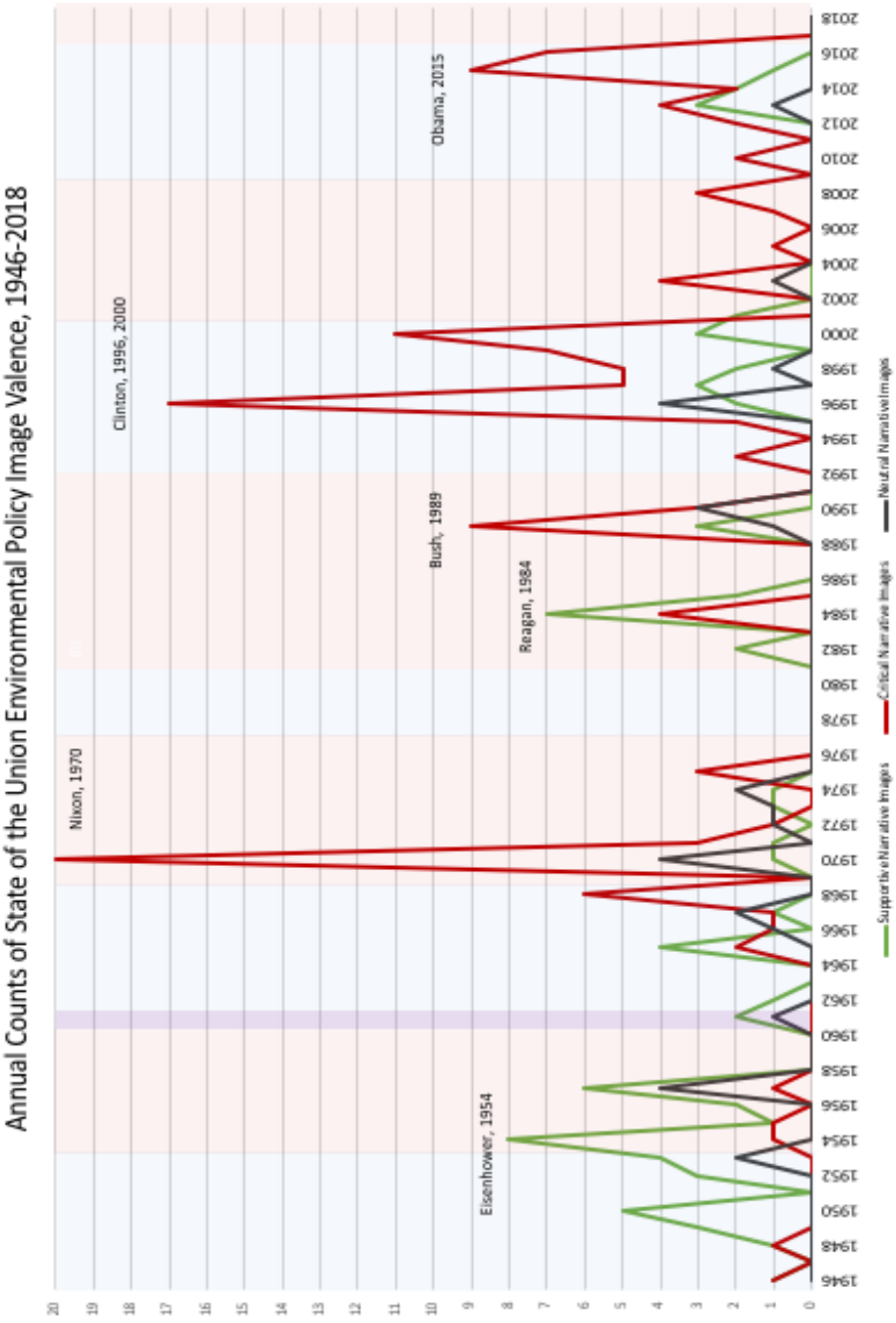


⁷ A normal distribution has a kurtosis value of 3. Higher values indicate leptokurtosis.

3) Partisan Narrative Policy Image Trends

Since US macro environmental policy is partisan, but salient with competing interests, it makes sense to expect both Democrats and Republicans will use narratives strategically but differently. Indeed, analysis of these narratives over time suggests this is the case. Plotting the quantity of narratives over time reveals “peaks” of narrative quantities, which emerge from otherwise low annual levels. Such peaks, or “punctuations” in PET parlance, are expected from the distribution of changes, because of the extreme values along the x-axis in Figure 3. Figure 4 illustrates the highest of the early punctuations (n=5) occur with Republicans (Eisenhower, Nixon, Reagan, and Bush 41), whereas more recent punctuations (n=4) occur with Democrats (Clinton and Obama). Figure 4 also presents the valence of these environmental narratives and includes party-specific shading (red for Republican, blue for Democrat, purple for the one year both are present). This analysis suggests both parties are employing narratives strategically, as expected.

Figure 4. State of the Union Environmental Narrative Image Annual Count and Valence, by Party



Policy image valence is an important added component to narrative in explaining partisan narrative image trends in this case, illustrating that the largest punctuations for both parties are characterized by high amounts of critical attention. PET would expect this as well, as critical attention is linked with destruction of subsystems in PET research. Notably, the only two large periods of supportive valence in this series are Republican (Eisenhower and Reagan). The positive valence is associated with increased support for existing structures, which is curious as these presidents are known for wanting to limit federal expenditures on environmental policymaking. Further qualitative analysis of these narratives may reveal policy aimed at two subsystems, such as environment and national defense for example, or perhaps it is just an indicator of resistance to change. This series also indicates a shift over time from generally supportive environmental narrative images to critical ones, suggesting turmoil in the related subsystems since the 1960's as federal attention encourages reworking of subsystem policymaking structures to accommodate changing issues and increased polarization.

The quantity and types of narrative attention in Figure 4 indicate both Republican and Democratic administrations use environmental policy narratives in their limited time to express their policy agenda to Congress. However, because of the value and policy priority differences espoused by the parties over time (e.g., Dunlap et al., 2001) and increasing polarization in federal policymaking and environmental and climate change policy identified in the literature (e.g., Kim & Urpelainen, 2017), trends in construction of narrative policy images between parties is also expected. Specifically, based on the substantive literature, Republicans should offer fewer solutions, especially solutions involving new government programs. Indeed, analysis of the narrative components does support the notion of multiple party-related differences in narrative

construction of environmental policy images, but the specific trends are unexpected. Tables 3 and 4 summarize Chi-square significance tests and associated Phi effect size tests for presence and type of narrative components within Democratic and Republican presidential speeches.

Table 3. Partisan Presidential Environmental Narrative Components in State of the Union Speeches, 1946-2018

Code	Democrat	Republican	Total	χ^2	ϕ
Solution	108	121	227	22.70***	0.27
Problem	100	50	150	16.46***	0.23
Hero	91	88	179	2.95	0.01
Beneficiary	35	32	67	0.25	0.03
Villain	24	14	38	1.19	0.06
Victim	30	10	40	7.50**	0.16
Narrative	138	111	249	0.13	0.02
Pro-Valence	42	49	91	4.04*	0.12
Con-Valence	97	66	163	2.97	0.01
Valence	167	137	245	0.03	0.01

Chi-square calculates the independence of the distributions of each code count for democrat and republican statements. Valence here refers to statements coded as having valence or not, *** indicates $p > 0.001$, ** indicates $p > 0.010$, and * indicates $p > 0.05$. Phi effect sizes are interpreted as approximately 0.10 = small effect, 0.30 = medium effect, 0.50 = large effect.

Most content categories (hero, beneficiary, villain, narrative generally, valence generally, critical valence) show no difference in use between parties, but significant difference in presence of policy solutions, problems, victims, and supportive valence (pro-valence) exists between the parties.

Counter to expectations, Republican presidents are more likely to include solutions, specifically new government programs. Republicans also are more likely to use supportive valence in their environmental policy images, as is indicated in Figure 4. The effect size is strongest for the relationship between Republicans and solutions. Although Democrats do not

offer more solutions, they do offer more problems, and this relationship appears nearly as robust as Republicans and solutions as indicated by the .23 Phi effect size statistic.

Unsurprisingly, Democrats are also more likely to talk about climate change specifically as a problem, as is expected from previous research.

Table 4. Common Types of Solutions, Problems, & Victims in Environmental State of the Union Policy Images, 1946-2018

Code	Type	Democrat	Republican	Total	χ^2	ϕ
Solution	Protect the environment	22	27	49	2.38	0.09
Solution	New Programs	11	24	35	8.83**	0.17
Problem	Pollution	35	25	60	0.56	0.03
Problem	Climate change	41	3	44	30.40***	0.32
Victim	Our/We	14	7	21	1.25	0.06
Victim	Children	6	3	9	0.52	0.04

Chi-square calculates the independence of the distributions of each code count for democrat and republican statements. Valence here refers to statements coded as having valence or not, *** indicates $p > 0.001$, ** indicates $p > 0.010$, and * indicates $p > 0.05$. Phi effect sizes are interpreted as approximately 0.10 = small effect, 0.30 = medium effect, 0.50 = large effect.

Environmental Narrative Policy Images in Modern State of the Union Addresses

As expected, this analysis finds that narrative captures much information about “how people talk about policy,” and has a distribution associated with macropolitical images over time. It also finds evidence of established environmental trends over time, especially those emerging since federal government expanded its environmental agenda – pollution and climate change. Lastly, partisan trends in narrative image construction were identified as expected. However, the construction of these partisan trends was unexpected: Republicans identify more solutions, positive valence, and suggest the creation of more government programs, whereas Democrats

identify more problems and victims. These findings indicate general fear- versus hope-based narrative tactics, stories of fear and hope that could be associated with partisan core beliefs about the appropriate size of government. Baumgartner & Jones (2015) find the identification of problems is associated with expansion of government and policymaking. Identification of problems may be a better indication of policy beliefs regarding government size and responsibility than identification of solutions, even solutions identifying new or expanded programs, which may be small or symbolic. Republicans espouse an environmental story of hope and Democrats one of fear.

These findings support the idea of using narrative to conceptualize policy images. Narrative has demonstrated a level of fitness in capturing policy image data. Narrative policy image analysis identified expected thematic trends in presidential SoUs based on both a literature review and summary analysis of the data. Lastly, analysis identified expected partisan trends but revealed new information about partisan environmental policy communication that could have important implications in directing both the public and government attention to policy issues. If partisanship in environmental policy is indeed being driven by party elites (e.g., Kim & Urpelainen, 2017), this analysis provides potentially motivating information: Environmental stories of hope may resonate better with Republicans because they may communicate evaluative information regarding the value of limited government size and responsibility for environmental management. Similarly, stories of fear may be more motivating for Democrats, who could interpret narrative illustrations of problems and victims as a call to action (e.g., Baumgartner & Jones, 2015), a moral imperative (e.g., Nisbet, 2009), or a problem in need of specific and intense policymaking (Baumgartner & Jones, 2015). In this case, the

narrative components strategically evaluating policy image information are the solution, problem, and victim. This may represent strategic storytelling in US macro politics more generally. To the extent that future research explores these story types, further demonstration of the fitness of NPF to conceptualize macropolitical policy images may emerge.

In addition to fitness, narrative attention analysis of macropolitical stories offers a research approach to balance between context and comparability that is based in policy process theory and empirical evidence. Substantively, it is capable of collecting and analyzing the kind of information the literature has deemed important over the years. Additionally, the narrative strategies of story types, the fear and hope stories, may indicate an important mobilization technique embedded in these narratives. By structuring the content of the narratives to contextually appeal to target audiences based on party beliefs, Republicans preferring limited environmental policymaking and Democrats preferring more expansive policy, these narrative strategies may instigate preference reordering.

Presidents of both parties may be using story types to justify addressing environmental problems in a way their party would support. Such a strategy may have the power to shuffle partisan preferences, with Republicans receiving assurance of a limited response through the use of solutions and positive valence and Democrats assurance of intensive policymaking. For Democrats, this intensive policymaking signal may provide some assurance of substantive, not symbolic policymaking, whereas Republicans may be satisfied with symbolic policy.

As part of the integration of PET and NPF, this research finds both narrative structure and attention valence coding have unique abilities to capture evaluative and empirical policy information. Characters, solutions, and problems do not capture nor duplicate the same

information as attention valence. For instance, democratic reliance on victims and problems is not associated with critical valence. This is likely because the theoretical concepts are capturing different information – character use is not likely related to subsystem creation or destruction. However, positive valence associated with Republican stories of hope bolsters the interpretation that these solution-orientated stories are associated with support for the status quo, limiting policymaking to address environmental problems. Therefore, it is suggested that future research incorporate attention valence into narrative coding in order to help understand narrative attention associations with policy change and stasis. Perhaps valence is associated with temporal subsystem information ordering other elements together in their narrative relationship, as a plot.

Finally, this research demonstrates Presidents are using narrative in their SoUs communicating environmental policy image priorities; however, if the President acts as the setter of the macro agenda regarding environmental issues (e.g., Vig, 2016), and there is a lot of attention focused on the climate change problem, why isn't more Congressional action taking place to address climate change? Generally speaking, a leveling-off of environmental legislation and an increase of executive orders has occurred beginning with President Clinton and continuing through President Obama (see Appendix 2). The increased use of executive orders and stable output of legislation suggests Congress is unresponsive to the President's environmental agenda. This response may be associated with increased polarization associated with the policy issue of climate change, also identified in this analysis, and suggests challenges for "real-effects" explanations of policy support (e.g., Kroznick et al., 2006). For instance, in a review of major climate change policy efforts since the 1960's, only four bills have been signed

into law (the only major and recent one was focused on recovering from The Great Recession), though many attempts at major policymaking efforts have been made (see Appendix 3 for a list of policy efforts including major provisions directed at climate change mitigation or adaptation). Future research should explore the power of SoU narratives to shift Congressional policymaking attention and control for partisan control of Congress, environmental public opinion, and focusing events like the water crisis in Flint, Michigan.

Conclusion

This research suggests narrative conceptualized policy images are useful in exploring contextual policy dynamics over time. As illustrated in analysis of SoUs, narrative policy images support theory development and comparability across multiple cases, encouraging progressive problem shift. Additionally, narrative policy images also have the potential of systematically uncovering nuanced relationships relevant to the particular policymaking subsystems and issues, as demonstrated in this analysis with the identification of Republican “stories of hope” and Democratic “stories of fear.” A narrative attention approach facilitates this balance of theoretical relevance, comparability, and case-relevance by involving theory in the data gathering process, while also relying on the important role of substantive knowledge, like the importance of partisanship in US federal environmental policymaking. Narrative policy images strike a balance between the benefits and drawbacks of deductive and inductive approaches. This balance encourages progressive problem shift by supporting theory’s ability to be holistically and accurately tested, reducing the potential for theory failures resulting from piecemeal approaches.

For PET, narrative provides a natural solution to the problem of the vague policy image (Peterson, 2018). The policy image definition in the literature is vague because it captures empirical information subject to variable interpretation (Jones & Baumgartner, 2005) by different people in different contexts. The significant value-added of a narrative operationalization of the policy image is to clarify and generalize the vague concept with a conceptualization of policy-relevant empirical information categorized into constituent parts inferring evaluative and emotional cues. Narrative provides this categorization in a manner consistent with PET's theoretical assumptions and maintains PET's framework focus on the central role of human heuristic thinking in the policy process. The resultant empirical approach is capable of unearthing policy attention phenomena that might not otherwise be captured with a different method and may play an important role in focusing and shifting attention in macropolitical institutions like the presidency and Congress.

This approach offers a way to explore the role of attention in narrative, especially in macropolitical institutions. Narrative attention can be explored at any level of the policy process, for instance in subsystems or in individuals (Peterson, 2018); however, it is likely most useful at the macropolitical level where actors' preferences are generally stable (e.g., Jones 1994a, 1994b, Baumgartner & Jones, 2009). An emphasis on attention provides a way to study "macro" policy narrative agenda setting and systems approach to policy process dynamics. Narrative exploration of these macropolitical institutions may help to generate knowledge about issue systems, alterations in subsystems, and potentially more about the role of narrative in the policy process.

Can narratives shift attention in individuals, subsystems, and promote policy change or stasis? Do stories of hope emphasizing solutions or stories of fear emphasizing problems matter

more for macropolitical attention? If Presidents offer a specific solution in their narrative images, it would make sense for their audience to respond specifically to the “moral of the story.” Likely, it also matters who this audience is – their base, Congress, interest groups, donors, or the public generally. Future research should explore stories of hope and fear, especially as they relate to macropolitical ideas to shift the research program progressively. This research supports the idea narrative is useful in macropolitical analysis, but in order to understand potential functions of narrative more generally, research connecting these narratives and policymaking attention and outputs will need to be done.

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Appendix 1

Policy Image Codebook

Instructions: For each section of the codebook, select one code for each relevant selection of text. Text selections may only receive 2 codes each: 1) One Policy Attention Code & 2) One Narrative Component Code. Sections of text may receive only one or no codes.

Policy Attention Valence

Explanation: Punctuated Equilibrium Theory (PET) studies often measure policy attention in terms of valence relative to the existing power structure because possible policy system impacts of mobilizations of ideas may correspond to their valence (see Paper I for further explanation).

Instructions: For every policy statement choose one of the following options, which best describes that statement:

1) Pro-subsystem Valence – The statement supports existing policy mechanisms, including but not limited to the funding of existing programs/policies, supporting previous policy stances, and recommendation of support to the status quo.

2) Con-subsystem Valence – The statement contradicts existing policy mechanisms, including but not limited to the recommendation of new programs and/or destruction/defunding/replacement of existing programs/policies, attacking previous policy stances, and recommendation of great changes to the status quo.

3) No Valence – The statement neither supports nor contradicts existing policy mechanisms.

Narrative Components

Explanation: Narrative Policy Framework (NPF) studies often operationalize policy narratives in terms of a character and policy referent, they often also include setting, and moral of the story (see Paper I for further explanation).

Instructions: For every policy statement choose one of the following options for each relevant section of text (i.e., do not code text with multiple of the following codes), which best describes that statement:

1) Characters – Choose one of the following character types for relevant persons. Choose the one which best fits the narrative characterization. If more than one of a type of character is present for a “multiple” for that category.

A) Hero – Enter the exact wording of a person or group cast as responsible for promoting a policy solution. This may be promotion implied by fighting a villain or helping a victim.

B) Villain – Enter the exact wording of a person or group cast as responsible for promoting a policy problem or errant solution. This may be promotion implied by fighting a hero or hurting a victim.

C) Victim – Enter the exact wording of a person or group cast as hurt by another character, policy problem, or solution.

D) Beneficiary – Enter the exact wording of a person or group cast as benefiting from the actions of another characters, policy problem, or solution.

2) Setting – Identify the public policy problem, challenge, dilemma, or dispute, using the language of the SOTU text itself.

3) Moral of the Story – Identify the public policy solution, value, normative position, or moral position using the language of the SOTU text itself.

Coding Notes:

- CAP Codes will be relied on to determine policy referent, because SOTU are short and the audience is likely to follow topical shifts;
- Therefore, narratives must contain a character only.
- Manifest coding is employed but pronoun identification may be gather from adjacent sections.
- Only one narrative code may apply to each segment of text. If there is a question regarding whether a segment falls into one category or another, code it as “indecisive.”

Appendix 2.

Table 5. Count of Enacted Environmental Legislation and Executive Orders by Administration

President	Years	Environmental Bills	Environmental Executive Orders
Truman	1946-1952	249*	2
Eisenhower	1953-1960	662	1
Kennedy	1961-1962	263	1
Johnson	1963-1968	1,101	4
Nixon	1969-1973	2,417	13
Ford	1974-1976	730	3
Carter	1977-1980	962	8
Reagan	1981-1988	1,510	5
Bush	1989-1992	1,125	4
Clinton	1993-2000	1,661	21
Bush	2001-2008	1,497	10
Obama	2009-2016	1,527	14
Trump	2017		2

*Data for 1946 not available

Appendix 3.

Table 6. Timeline of Major US Efforts at Climate Change Policy (1946-2017)

Year	Law	Status
1987	Global Climate Protection Act of 1987	Enacted
1990	The Global Change Research Act	Enacted
1997	Kyoto Protocol	Rejected 2001
2003	Clear Skies Act	Died in Committee
2003	Clean Power Act	Died in Committee
2003	McCain-Lieberman Climate Stewardship Act	Failed Senate Vote
2005	McCain-Lieberman Climate Stewardship Act	Failed Senate Vote
2007	Massachusetts et al. v. Environmental Protection Agency	EPA can regulate greenhouse gasses
2007	Global Warming Pollution Reduction Act	Died in Committee
2009	American Clean Energy & Security Act	Died in Committee
2009	American Recovery & Reinvestment Act	Enacted
2009	Federal Leadership in Environmental, Energy, & Economic Performance (Executive Order 13514)	Revoked
2013	Climate Action Plan	Eliminated 2017
2015	Clean Power Plan	Repeal expected in 2018
2015	Paris Climate Agreement	Withdrawn 2017

Appendix 4.

Table 7. Timeline of Major US Environmental Focusing Events (1930-2017)

Year	Event	Location
1930	Midwest Dust Bowl	Oklahoma, Texas
1954	Castle Bravo Nuclear Weapons Test	Marshall Islands
1976	Love Canal Investigation	New York
1979	Three-Mile Island Nuclear Meltdown	Pennsylvania
1983	Bunker Hill Mine Contamination	Idaho
1983	Dioxin Contamination	Missouri
1984	Ringwood Mines Landfill Site	New Jersey
1986	Chernobyl Disaster	Ukraine
1986	Hanford Nuclear Waste Release	Washington
1989	Exxon Valdez Oil Spill	Prince William Sound, Alaska
1990	Radiation Exposure Compensation Act	US
1990	Libby Asbestos Contamination	Montana
1996	Pincher Lead Contamination	Oklahoma
2008	TVA Coal Ash Spill	Tennessee
2010	Deepwater Horizon Oil Spill	Gulf of Mexico
2011	Fukushima Daiichi nuclear disaster	Japan
2017	Atomic Homefront Movie	Missouri
2017	Mississippi Dead Zone	Gulf of Mexico

Paper III: Presidential Stories of Fear: Focusing Congressional Climate Change Mitigation Attention

Abstract

Do presidential climate change narratives increase related congressional attention? Narrative theory says that since narratives leverage human cognitive heuristics, they should focus policymaking attention in institutions more efficiently than statements. This study identifies and tests climate change statements and narratives, including those focused on solutions, or “stories of hope,” and those focused on problems and victims, “stories of fear,” for relationships with congressional attention using time series analysis. Findings suggest a relationship between narrative and hearings, but not for statements and hearings. Furthermore, while narratives are related to hearings generally, stories of fear have larger effects, but only in conditions of single-party control of the Presidency and Congress. This analysis supports theory about narratives and institutional influence and offers the additional concept of stories of fear and hope as impactful on institutional agendas.

Macropolitical Climate Change Narratives and Policymaking

In US political culture, narrative is often assumed to be effective in national level, macropolitical policymaking (e.g., Safire, 2004), such as when the President addresses Congress about polarized policy problems, but is this cultural instinct empirically supported? This research suggests that they do and in ways suggested by previous research about the role of policy ideas, narratives, party polarization, emotions, and beliefs might expect: SoU climate change narratives are related to increases in relevant Congressional hearings, especially those narratives emphasizing problems, called “stories of fear.” Stories of fear were only related to increases in hearings during periods of unified government, where the Presidency and both houses of Congress were controlled by the same party. “Stories of hope” emphasizing solutions also as expected, were not related to increases in hearings.

President Barack Obama has argued the importance of narrative in macro policymaking and noted his focus on policy solutions may have prevented him from building better policymaking narratives (Bai, 2012). In January of 2009, Obama, the then “Narrator in Chief” (Bai, 2012), delivered the first of his eight annual SoUs to a joint session of Congress. This SoU address, his first, was also the first given by a Democratic president to a Democratically controlled Congress since early in President Bill Clinton’s first term, almost 15 years before. In the 2009 address, Obama discussed climate change in alternating hopeful and fearful rhetoric. He offered solutions in the way of specific policy tools, but also emphasized the potentially catastrophic problems, the “ravages of climate change” (Obama, 2009).

Though Obama only dedicated a few moments of his speech to climate change related policy, he emphasized a policy solution, explicitly promoting the cap and trade legislation that

would be titled “America Clean Energy and Security Act of 2009” (Waxman, 2009a) and known as the “Waxman-Markey Bill⁸.” Cap and trade, or emissions trading, is a market-based policy tool that limits carbon air pollution and places a price on it, so companies can barter for scarce carbon pollution production rights. Climate change mitigation policy requires large limits on emissions and their eventual arrest (ICPP, 2018). The Waxman-Markey Bill articulated a major federal effort to mitigate climate change by providing a “market-based cap on carbon pollution” to simultaneously fight climate change and drive “the production of more renewable energy in America” according to Obama (2009).

Just five months after Obama’s 2009 SoU, the House of Representatives passed the Waxman-Markey Bill and it was received in the Senate the following month but never brought for a vote (Waxman, 2009b), “dying” in committee. Democratic Senate Majority Leader Harry Reid said he didn’t have enough votes to pass the bill (Hulse & Herszenhorn, 2010), and as the 2010 midterm elections loomed, no Republicans would support it, although it included many provisions friendly to conservatives and fossil fuel interests (e.g., Samuelsohn, 2010, Wasserman, 2010). Explanations for this policy failure included a relative lack of environmental lobbying of Republican senators compared to fossil fuel interests (e.g., Samuelsohn, 2010, Mckinder, 2010, Downie, 2017, Brulle, 2018), the misrepresentation of the issue and legislation by the media (e.g., Pooley, 2009, Boykoff, 2011), that policy solutions went too easy on major polluters (Wasserman, 2010), and that Democrats, including Obama, failed to frame the legislation

⁸ For its Democrat authors Representatives Henry A. Waxman of California and Edward J. Markey of Massachusetts.

appropriately (e.g., Nisbet, 2009, Wasserman, 2010, Nisbet, 2011, McAdam, 2017, Lockwood, 2018), missing the opportunity to tell an inspiring climate change story.

Years after the Waxman-Markey Bill failed in the Senate, Obama said it was the job of the President to “tell a story to the American people that gives them a sense of unity and purpose, especially during tough times” (Bai, 2012), emphasizing the roles of hope and fear in political narratives. Obama said he had been too focused on getting policy solutions “just right” and not focused enough on providing a narrative about these issues, a narrative that does some “explaining, but also inspiring” (Warren, 2012).

Obama’s sentiments about the role of presidential storytelling illustrate contemporary questions about the role of narratives, and their solutions and problems, in macro level policymaking (e.g., Peterson, 2018, Shanahan et al., 2017). Past substantive climate change and policy studies research has largely overlooked the role of storytelling to focus macro level attention. Furthermore, the relative lack of macro level climate change policy and associated cession of power regarding it from Congress to the President (see Table 8), given the enormity of the problem (e.g., IPCC, 2018), raises questions about whether the previously demonstrated effectiveness of SoU to focus congressional policymaking (e.g., Lovett, Bevan, & Baumgartner, 2015, Baumgartner & Jones, 2009) holds for the complex and partisan issue of climate change. Though a single case, Obama’s SoU support for but the ultimate failure of the Waxman-Markey Bill illustrates this question: Are macropolitical climate change policy narratives, like those delivered by Obama in his 2009 SoU, effective in focusing the attention of Congress? The following sections introduce two frameworks, Punctuated Equilibrium Theory (PET) and Narrative Policy Framework (NPF), exploring the role of policy ideas and attention in macro

polycymaking and then exploring the relationship between SoU climate change narratives and related Congressional attention with time series analysis.

Table 8. Timeline of Major US Macropolitical Efforts at Climate Change Policy (1997-2018)

Year	Law	Status
1987	Global Climate Protection Act of 1987	Enacted
1990	The Global Change Research Act	Enacted
1997	Kyoto Protocol	Rejected 2001
2003	Clear Skies Act	Died in Committee
2003	Clean Power Act	Died in Committee
2003	McCain-Lieberman Climate Stewardship Act	Failed Senate Vote
2005	McCain-Lieberman Climate Stewardship Act	Failed Senate Vote
2007	Massachusetts et al. v. Environmental Protection Agency	EPA can regulate greenhouse gasses
2007	Global Warming Pollution Reduction Act	Died in Committee
2009	American Clean Energy & Security Act	Died in Committee
2009	Federal Leadership in Environmental, Energy, & Economic Performance (Executive Order 13514)	Revoked
2013	Climate Action Plan	Eliminated 2017
2015	Clean Power Plan	Repeal expected in 2018
2015	Paris Climate Agreement	Withdrawn 2017

Institutional Policymaking Narratives

According to PET, “policy images” – the ways people think and talk about public policy – have impacts within the policy process when they focus attention of policy actors, especially macro level policy actors like the US Congress (e.g., Baumgartner & Jones, 2009). The way elites craft and disseminate policy images can effectively focus policymaking attention (Baumgartner & Jones, 2009). As Obama observes, and for PET, policy images contain both information about policy issues and judgments about them – evaluative and empirical information – capable of explaining and inspiring. However, most empirical approaches involving PET’s conception of a policy image only explore small segments of images or count individual statements to measure policy images (e.g., Baumgartner & Jones, 2009, Peterson, In Review). Recent scholarship

regarding policymaking narratives (e.g., Peterson & Jones, 2016) argues that, as Obama implies, policy images are likely more effective at generating attention if they are narratives, especially in the case of climate change policy, where polarization complicates cognitive processes (Jones & Peterson, 2017). For this reason, it is likely necessary for Presidents to tell a good story for a divided Congress to pay attention, especially regarding polarized issues.

The narrative policy framework (NPF) says agential stories, called “narratives” function within institutions to promote policy change (Shanahan et al., 2017). A recent elaboration of this theory, proposed that within policymaking institutions, narratives matter because they can focus attention, propelling policy images onto agendas and increasing the likelihood of related policy change (Peterson, 2018). According to these ideas about narrative attention, the reason for this is policy actors generally have stable policy preferences within macropolitical institutions like the US Presidency and Congress (e.g., Baumgartner & Jones, 2009). A good narrative may not convince Texas Republican Senator Ted Cruz to agree with the scientific consensus on climate change, but it might inspire new levels of attention in other members of Congress, who hadn’t previously spent much time working on or against climate change policy. These members may not have developed policy preferences of their own, instead merely bending to the sway of party elites, or have not yet come to imagine climate change as a problem relevant to them. They also may have preferences capable of reordering if the introduction of a powerful idea shifts their attention (e.g., Jones, 1994, Jones & Baumgartner, 2005, Sheingate, 2000). NPF posits that narratives effect change because they persuade (e.g., Shanahan et al., 2017). Narrative persuasion is when policy narratives alter existing policy preferences, like Senator Cruz’s, but narrative attention is when narratives engage their audience with a meaningful idea that shifts

the focus of their attention. Narrative attention places ideas on agendas. Since macro political actors have stable preferences, narrative attention is more likely to affect institutional policy change than narrative persuasion. Narratives can focus attention because of their heuristic construction, which makes them easier for people to pay attention to and understand, making them useful in macropolitical narratives (Peterson, 2018). For these reasons, it is hypothesized narratives are more influential on Congress than statements alone.

According to the NPF, people cognate narratively – people think about and talk about policy information in terms of narratives, so when they are presented with information in story form, it is more impactful on their thinking than non-narratives (Jones & McBeth, 2010). Because of the likely importance of narrative cognition in policymaking, the NPF identifies narrative components, elements like characters, plot, setting, and moral of the story (solution), and content, like narrative strategies and beliefs (Shanahan et al., 2017). Characters generally include heroes, villains, and victims, but sometimes also beneficiaries (e.g. Weible et al., 2016). These narrative elements are generalizable across narratives and studies, depending upon how they are operationalized.⁹ This means that victims identified in climate change stories, for example, might be meaningfully compared to victims in tax increase narratives (e.g., McMorris et al., 2018) or firearm narratives (e.g., Smith-Walter et al. 2016). Narrative content requires transformation into a broader concept, like party identification or culture theory (e.g., Zanoocco & Jones, 2018) for beliefs, or general strategies like the devil/angel-shifting (emphasizing the

⁹ For instance, some studies, like this one, only include humans as characters because they are thought to be the only types of characters who have agency (Weible et al. 2016), but others like Smith-Walter et al. 2016, allow symbols like “gun rights” to be characters.

opponent's potential to harm and the narrator's beneficence, e.g., Shanahan et al. 2013) to be compared across cases.

Stories of Hope & Fear: Presidential Policymaking Narratives

A recent descriptive analysis of SoU environmental narratives using narrative attention identified two potentially new narrative strategies relevant to macro politics: "stories of hope" emphasizing solutions and "stories of fear" emphasizing problems and victims (Peterson, In Review). These story types emerged from comparisons of narrative elements across political parties. Stories of fear are narratives including references to villains, those persons or groups cast as responsible for promoting a policy problem or errant solution, and victims, those persons or groups cast as hurt by another character, policy problem, or solution. Clinton delivered a climate change story of fear in his 2000 SoU: "If we fail to reduce the emission of greenhouse gases, deadly heat waves and droughts will become more frequent, coastal areas will flood, and economies will be disrupted." Stories of hope are narratives including an identified public policy solution. This solution may be a promoted position regarding a value, normative, or moral stance as well as assertion of policy instruments like cap and trade. For instance, in Obama's 2010 SoU, he delivered this story of hope: "And, yes, it means passing a comprehensive energy and climate bill with incentives that will finally make clean energy the profitable kind of energy in America."

The Problem with Solutions

Policy solutions can be tricky for elite narrators to craft because, while they promote action, they involve controversial components. Obama, like Clinton and President George W. Bush before him, framed climate change mitigation in terms of positive economic effects (Nisbet, 2009), "green jobs," and "renewable energy development," (see Table 13 in Appendix 5

for a summary of SoU statements regarding climate change policy), emphasizing both solutions and problems to his counterparts in Congress. However, Obama's market framing of policy solutions was criticized as disingenuous (Wasserman, 2010), oversold (Nisbet, 2009), potentially causing his audience to double down on pre-existing ideas (e.g., Hart & Nisbet, 2012, O'Neill & Nicholson-Cole, 2009) and failing to inspire others. According to some critics, by pushing a cap and trade policy solution, he alienated people whose support he needed (e.g., Wasserman, 2010, Nisbet, 2011, Lockwood, 2018) both in Congress and the public (e.g., Nisbet, 2009, McCright, Dunlap, & Xiao 2014, Brown & Sovacool, 2017).

The US is segmented regarding support for climate change policy (e.g., Myers et al., 2013). People polled in the US generally tend to support climate change mitigation (Leiserowitz 2006, Shwom et al. 2010, Ansolabehere & Konisky 2014, Smith & Leiserowitz 2014), but issue partisanship accelerated around the time of the Waxman-Markey Bill (e.g., Antonio & Brulle, 2011). Increased partisanship potentially exacerbated existing cleavages in the population's preferences and attention driven by characteristics of policy solutions. Climate change mitigation policy is complex, involving nested ecosystems, various governments and technologies, specialists from many fields, and systemic solutions like cap and trade (e.g., Keohane & Victor, 2011, IPCC, 2018, Chan, Stavins, & Ji, 2018). It involves diverse policy actors, further increasing the complexity of the policy solutions, which was illustrated in this case by the great involvement of the fossil fuel industry in the Waxman-Markey Bill (e.g., Wasserman, 2010). Climate change mitigation policy also has global benefits and local costs, especially costs to areas dependent on fossil fuel production and use. According to some scholars, these attributes make it difficult for some segments of the population to support climate change mitigation policy solutions (e.g.,

Jones, 2010, Kahan et al., 2011, McCright et al., 2014, Smith & Mayer, 2018), making effective stories emphasizing solutions difficult to craft.

Traditional approaches to climate change communication research suggested that if people understood the scientific consensus, they would agree on climate change problems and the related solutions (e.g., Leiserowitz & Smith, 2010). However, greater knowledge about climate change does not appear to increase support for policy solutions (e.g., Kellstedt, 2008, Kahan et al., 2011), and more recent research supports the notion that beliefs, not knowledge, drive preferences about climate change policy (e.g., Nisbet, 2009, Nisbet & Goidel, 2007, Jones, 2010, Kahan et al., 2012, 2015). Indeed, climate change is famously polarized along political party beliefs (e.g., Guber, 2013, McCright et al., 2014, Jasny et al., 2015, Jenkins et al., 2017) and is thought to be driven in large part by elites and economic conditions (e.g., Brulle, Charmical, & Jenkins, 2012, Kahn & Kotchen, 2011, Scruggs & Benegal, 2012), emphasizing the importance of macropolitical stories.

Further problematizing the role of climate change solutions is that, in this domain, solutions are often interpreted as either “liberal social policy” or “conservative economic policy” (e.g., Antonio & Brulle, 2011, McCright & Dunlap, 2011). This cognitive dichotomy implies mitigation policy has national costs for global benefits (e.g., Lockwood, 2018), supporting global “free-riders” (Ostrom, 2014), which are the costs and benefits distributions that nationalistic-leaning Republicans and conservatives, especially conservative white males, eschew (e.g., Lockwood, 2018, Haidt, 2012, McCright & Dunlap, 2011). This was famously demonstrated by President George W. Bush when he withdrew the US from the Kyoto accord, citing unfair costs to the US (e.g., McAdam, 2017). Because of the many difficulties identified in the literature

regarding public support for specific climate change policy solutions, it is hypothesized that narratives emphasizing solutions, so-called “stories of hope,” will not be related to increases in Congressional attention.

Problems & Policymaking

Stories of fear may be related to government’s proclivity to grow in response to identified problems¹⁰ (e.g., Stone, 1989, Baumgartner & Jones, 2015), and therefore be more useful in inciting attention in macro governmental institutions. Issues become more salient as they are considered problems (e.g., Jennings & Wlezien, 2011), and according to Stone, before problems can be addressed by government they must include a causal story that makes them amenable to government intervention (1989). Additionally, Baumgartner and Jones (2015) find problem identification and subsequent information searches increase the size of government and elicit more intensive policymaking (2015). Stories of fear tie problems explicitly to government action and infer these problems by identifying their victims. Stories of hope identify government as able to address policy issues even more clearly by articulating the solution, but deemphasize the problems both in their lack of empirical information like problem identification, (e.g., “climate change”) or evaluative information like characters (e.g., “millions of Americans”), making stories of fear likely more effective at inspiring government attention.

¹⁰ The literature has long established the disconnect between solutions and problems for a variety of reasons including political (e.g., Lukes, 1974, 2005, Bachrach & Baratz, 1962, Schneider & Ingram, 1998), organizational process (e.g., Kingdon, 1984, Cohen, Marsh, & Olsen, 1972), and heuristic information processing (e.g., Jones & Baumgartner, 2005).

Partisan SoU stories of hope and fear identified by Peterson fit the historic Republican preference for limited environmental policy¹¹ (e.g., McCright & Dunlap, 2014) – Republicans preferred stories of hope (Peterson, 2018), which acknowledge the issue but should not instigate intensive policymaking like stories of fear. Democrats utilized stories of fear, which makes sense given their historic espousal of support for federal environmental regulation (e.g., Daines & Sussman, 2010, McCright & Dunlap, 2014, Kim & Urpelainen et al. 2017). For this reason, it is likely the story types evident in Peterson’s description of environmental SoU narratives will fall along the previously identified partisan lines.

However, climate change mitigation policy narratives should pervade multiple issue areas beyond environmental policy because of the great complexity of the problem. For instance, the major cause of anthropogenic climate change is the production and use of fossil fuels (e.g., ICPP, 2018) and energy production is a major topic of macropolitical interest, accounting for more agenda space on the SoU than the environment (comparativeagendas.net). Additionally, as illustrated by the Kytoto Protocol and Paris Agreement, climate change is a global issue impacting foreign relations (e.g., Chan, Stavins, & Ji, 2018), and state and local governments (e.g., Ostrom, 2009, Grant, Bergstrand, & Running, 2014). It is also a problem associated with infrastructure, health, and economic impacts (e.g., USGCRP, 2018, Stoutenborough, Vedlitz, & Xing, 2016, Myer et al., 2012, Maibach et al., 2010).

¹¹ With the notable exception of President Richard Nixon (see Byron & Sussman, 2010 and Turner & Isenberg, 2018)

As Republican presidents encourage policymaking¹² in some areas like national defense, healthcare, infrastructure, energy, and economic policy, it is likely they craft climate change related policy statements in other areas besides environmental policy. For instance, in Bush's 2008 SoU, he delivered this narrative: "Together we should take the next steps: Let us fund new technologies that can generate coal power while capturing carbon emissions." Bush's carbon-capture "clean coal" energy policy narrative alludes to climate change with its carbon emissions reference, although it does not take the explicit focus of environmental policy. It is likely that similar referential narratives exist in other policy domains commonly linked to climate change mitigation. Therefore, climate change fear and hope story types should be explored across both parties and domains. For this reason, all SoU policy statements are included in this analysis of climate change narratives, not just environmental policy statements.

Narrative emphasis on solutions versus problems may also relate information about the role of emotions and differences in audience. Research suggests feelings of anger, guilt, (e.g., Lu & Schuldt, 2015, Smith & Leiserowitz 2014, Leaner & Keltner, 2000, 2001) and agency are important for audience members to feel and believe in order to influence support for climate change policy (e.g., Pidgeon & Fischhoff, 2011, Stone, 1989). Emphasizing solutions encourages feelings of personal agency, expressing how policy problems are amenable to control and identifying the mechanisms by which this control is possible (e.g., Stone, 1989, 2011). Feelings of agency may help the already attentive public, who may believe, for example, that government action cannot halt the progress of climate change because of the resilience of the environment

¹² Some of the policymaking that Republicans encourage will be to reduce the size of the government.

(e.g., Jones, 2010), to become convinced of the potential of a human solution. Similarly, it may focus the attention of citizens on the issue that once seemed irrelevant because it seemed not addressable by their own actions (e.g., Attari et al., 2010). Feelings of agency may therefore help to persuade public opinion (e.g., Jones & Peterson, 2017).

Since macropolitical policymakers like Ted Cruz are likely less impacted by narrative persuasion, agency is likely less important than other feelings like anger or fear. Emphasizing problems and victims may help to shift the attention (e.g., O'Neill & Nicholson-Cole, 2009) of inattentive macro policy actors by inspiring anger or guilt. Feelings of anger or guilt in policymakers may inspire the information searches associated with problem identification at this level of the political system (Baumgartner & Jones, 2015). These emotion-instigated searches may bring more previously apathetic policymakers and venues into the fray. This is an important distinction, because at the macropolitical policymaking level, change is often driven not by persuasion but attention (e.g., Baumgartner & Jones, 2010); therefore, the feelings motivating individual persuasion and elite attention may differ in this manner.

Furthermore, an emphasis on problems and victims instead of solutions avoids the issue of alienating segments of society opposed to particular solutions, like complex ones with diffuse benefits, and the cognitive frames (e.g., Lakoff, 2010) like “liberal social policy” associated with them. In the case of climate change mitigation policy, a focus on stories emphasizing problems and victims may therefore also be more relatable to necessary segments of the population than stories focusing on specific policy solutions, such as cap and trade. By emphasizing problems and victims, policymakers can target their base with their narrative component choices or target the public more broadly while avoiding the public cleavages in opinion regarding climate change

policy solutions¹³. For instance, in his 2014 SoU, Obama delivered this story of fear: “But we have to act with more urgency, because a changing climate is already harming western communities struggling with drought, and coastal cities dealing with floods.” For these reasons, it is hypothesized that stories of fear will be related to increases in Congressional attention. In the following sections, the hypotheses that SoU climate change narratives are more effective at focusing macropolitical attention than statements alone, and that stories of fear are more effective at focusing macropolitical attention than other measures, including statements, narratives generally, and stories of hope, are tested regarding federal climate change mitigation policy. Given the polarization of this policy domain, it is likely that single-party control of the government will influence these relationships, especially for story types. Since story types deliver information capable of encouraging policymaking with potentially controversial evaluations, they are the most likely to be influenced by macropolitical partisan power dynamics.

The President is thought to be the primary policy agenda setter in macro policymaking (e.g., Cohen, 1999, Tsebelis, 2002, Barrett, 2004, Baumgartner & Jones, 2009,) so it makes sense to explore his policy speeches (e.g., Cohen, 1995, 1999, Cummins, 2008) as a way of exploring the effect of his narratives. This is especially true of environmental topics (e.g., Vig & Kraft, 2015, Daynes & Sussman, 2010, Soden, 1999), like climate change mitigation, where the President often dominates the policymaking arena (see also Table 8). Since SoU are the primary rhetorical policy artifact Presidents articulate their policymaking agenda to Congress in, they make a good source of data to explore macropolitical agenda-setting activity. In SoUs, the President attempts

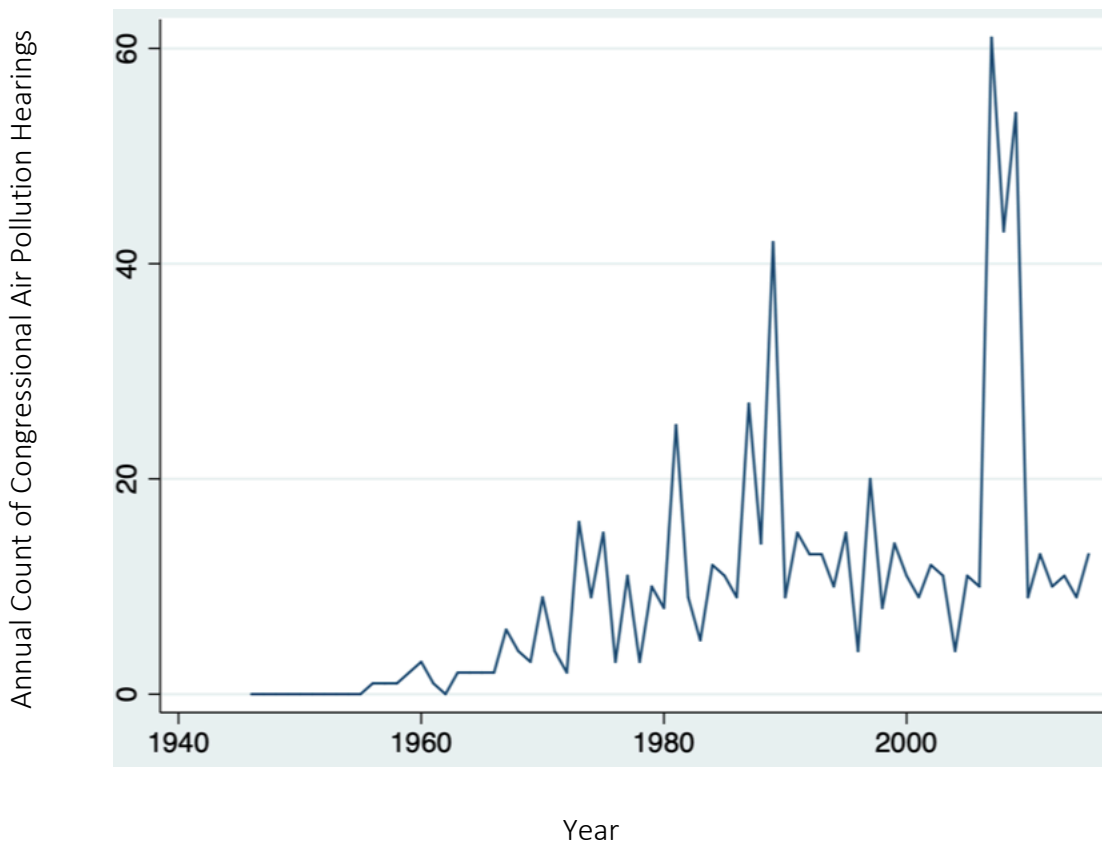
¹³ According to Gallup polling data going back to 1989 compiled by Bowman and O’Neil (2017) most Americans have agreed that climate change was an issue worth addressing historically, suggesting that identification of a problem is less controversial than the solutions.

to set Congress's agenda by influencing which policy images Congress pays attention to and which they do not (e.g., Beckman, 2010, Lovett, Bevan, Baumgartner, 2015). SoU addresses require many resources to craft and involve many policy actors in identifying topics of interest and the way they are framed. For this reason, SoU are intentional and strategic expressions of the executive branch's policy priorities (e.g., Shogan & Neale, 2012), especially given the limited space of the SoU, expressing agenda priority. Past research has used SoU data for these reasons (e.g., Cohen, 1995, 1999, Lovett, Bevan, & Baumgartner, 2015).

The hypotheses that SoU climate change narratives and specifically those focused on problems and victims, the "stories of fear," increase Congressional attention to relevant policymaking efforts is tested in this paper. Specifically, this analysis explores the time period beginning with the modern environmental movement, which is characterized by a public awareness of the human effect on the environment (e.g., Dunlap & Mertig, 1991, Kraft & Furlong, 2017). Specifically, this period is of interest because of the changing climate associated with this period (e.g., King et al., 2016) and the growing awareness that air pollution, like methane, black carbon, ground-level ozone, and sulfate aerosols that harm human health, ecosystems, and cause climate change (e.g., IASS, 2019) were impacting the environment and amenable to government intervention (e.g., Vig & Kraft, 2015). At the beginning of this period, scientific communities and specialists began talking about anthropogenic climate change and air pollution, making it an image beginning to contend for macropolitical agenda space. Figure 5 shows the quantity of air pollution hearings, the category including climate change mitigation discussion, yearly in the period from 1946 through 2015. The first several years show no Congressional activity, although the topic is emerging on the national agenda. As Congress cedes

policymaking authority to the President over the years (see Table 8), and this responsibility is reflected in SoU narratives, related Congressional activity should increase as the President focuses attention. The next section of this study describes the data gathering and analyses methods. Afterward follows the findings, discussion, and conclusion.

Figure 5. Annual Congressional Hearings on Air Pollution, 1946-2015



Data & Method

Policy Narratives

SoU policy statements from 1946 through 2015 were obtained from the Comparative Policy Agendas (CAP) project (comparativeagendas.net). These statements include sentences and phrases within the SoU addresses terminating in punctuation like colons, periods, exclamation marks, and questions marks. Ninety-seven SoU statements were coded as climate

change relevant using word search for the terms “climate change,” “carbon,” “emission,” “greenhouse,” “clean coal,” and “clean energy.” These search terms were identified after an initial reading of the SoUs and based on previous analysis of environmental SoU narratives (Peterson, In Review). The terms often co-occur and begin around the time climate change national attention was at a high, garnering front-page coverage and receiving attention from both parties in the US, in 1989 (e.g., Brulle, 2018). Terms regarding energy production and usage are important to include in this analysis because energy emissions are the primary cause of climate change and policy attempts at climate change mitigation target energy production and usage (ICPP, 2018). The codebook instrument for this content analysis is located in Appendix 6.

Once climate change relevant statements were identified, 88 were then coded as narratives using NPF’s definition that a policy narrative at minimum contains a character and policy referent, which has been found to be relevant in the extant literature (Shanahan et al., 2017, 2018). Annual counts of these narratives ranged from zero to 10. Since the policy referent was effectively coded in identifying the policy issue type by CAPs researchers and additionally through the climate change policy relevance coding described in the previous paragraph, identification of narrative was accomplished in this second step by coding for the presence of a character. Following previous work (e.g., Peterson, In Review, Weible et al., 2016), characters were defined as heroes, villains, victims, and beneficiaries. In order to be characters, codes must refer to humans, and generally speaking, heroes help, villains harm, victims hurt, and beneficiaries prosper. More detailed coding guidelines for these categories are in the codebook in Appendix 6 and are summarized in Table 9.

Table 9. Summary State of the Union Climate Change Coding Scheme

Code	Rule
Statement	SoU statement referencing either climate change and the pollution-related causes and solutions
Character	A person or groups cast as heroic, villainous, victims, or beneficiaries
Narrative	Statements including a character
Non-narratives	Statements excluding characters
Fear Story	Narratives emphasizing problems & victims, but not solutions
Hope Story	Narratives emphasizing solutions, but not problems & victims

Next, the statements identified as narratives were coded for story type. Story type was a narrative strategy identified in previous SoU narrative research (Peterson, Under Review).

Peterson identified two story types in her exploration of environmental policy narratives in SoU: a story of hope and a story of fear. She identifies stories of hope as those emphasizing policy solutions and stories of fear as those emphasizing problems and victims. This hope and fear typology was applied to narratives identified as climate change relevant narratives, coding 52 narratives as stories of hope and 31 as stories of fear. Though a single SoU address may include both stories of fear and hope, no single narrative may be both a story of fear and hope. The first instance of these stories was in 1989 and annual counts range from zero to eight.

Intercoder reliability testing was conducted on narrative and story types codes. This approach to reliability is often conducted in NPF research (e.g., Smith-Walter et al., 2016, Shanahan et al., 2017). An additional coder underwent training and applied the codebook in Appendix 9 to all climate change SoU policy statements. All content categories met a generally accepted minimum reliability threshold of 90% agreement and the .70 threshold for substantial Cohen’s kappa and Krippendorff’s Alpha statistics (e.g., Lacy & Riff, 1996, Salkind, 2010, Shanahan et al., 2017). Intercoder reliability statistics are presented in Table 10. The narrative content information collected and tested for reliability in this process was next explored for

relationships with annual count of Congressional hearings relevant to environmental climate change impacts using time series analysis.

Table 10. Intercoder Reliability for Policy Attention & Narrative Content Categories

Variable	Percent Agreement	Cohen’s Kappa	Krippendorff’s Alpha	Disagreements
Narrative	98%	0.89	0.89	2
Fear story	95%	0.81	0.81	6
Hope story	92%	0.82	0.82	7

Congressional Hearings

Climate change-relevant congressional hearings from 1946 through 2015 were also obtained from CAPs. These 698 hearings were coded using the same policy topics codebook applied to SoU statements. Annual counts of these hearings ranged from zero to 61. The topic description for these hearings, coded as “Air Pollution Hearings” from the CAPs Policy Topics Codebook (comparativeagendas.net) is: “Includes issues related to air pollution, climate change, and noise pollution.” This subset of hearings was chosen as the dependent variable because this topical section is most likely to capture Congressional hearing activity variation associated with presidential climate change narratives because it specifically includes hearings related to climate change. Additionally, air pollution hearings are relevant to climate change policy since the major drivers of climate change – the extraction and burning of fossil fuels – are the major sources of air pollution (ICCP, 2018). Furthermore, many air pollutants that are harmful to human and ecosystem health contribute to climate change (IASS, 2018). Though noise pollution may seem unrelated to climate change, major sources of noise pollution, such as shipping (e.g., Elias, 2018) and oil and gas drilling (e.g., Hill, 2014) are related to activities that are major sources of the greenhouse gas emissions causing climate change and therefore some level of policymaker

climate change attention should be seen there as well. Finally, this operationalization of Congressional attention is maintained exactly as CAPs researchers have coded it for comparability.

Other Independent Variables

Explanatory variables of interest (statements, narratives, and stories) are interacted with a dummy variable capturing single-party control in order to explore the effects of explanatory variables of interest when a president is addressing his own party members. This is important because climate change policy is so politicized and therefore Congress is more likely to act if they are controlled by the same party as the Presidency. SoU delivered in times of single-party control of the government have better legislative impacts (e.g., Beckman, 2010, Shogan & Neale, 2012). Additionally, past research using CAPs data to examine presidential impacts on congressional attention identifies single party control of government and presidential popularity as a variable of importance (e.g., Lovett, Bevan, & Baumgartner, 2015, Fagan, 2018). For this reason, all explanatory variables of interest are also included as interaction variables where SoU climate change information is interacted with single-party control¹⁴.

Presidential popularity is included in the models as well. This measure of public opinion is included because of the likely impact of the public's approval of the President on whether or not Congress responds to his agenda. Unpopular presidents may be less likely to focus Congressional attention. The single party control variable is a dummy variable coded as "1" in the cases where the President and both houses of Congress are controlled by the same party and "0" when they

¹⁴ Findings of interest were maintained in models not including the interaction variable with the exception of the fear story, which depended upon the interaction.

are not. A proxy for presidential popularity was obtained by averaging percent support gathered from Gallup polls (Gallup, 2018) occurring in January¹⁵ of the year of interest. The approach of calculating the president's popularity at the time the speech is delivered has been used in the past in time series analysis models (e.g., Cohen, 1995, 1999).

Since climate change policy at the federal levels is characterized by partisan polarization (e.g., Guber, 2013, McCright & Dunlap, 2014, Kim & Urpelainen, 2017), party control of the presidency, house, and senate are included as well. Since periods of great economic change are included in this analysis that would also likely impact a relationship between presidential agenda setting attempts and congressional responses regarding climate change mitigation policy (e.g., Kahn & Kotchen, 2011), percent change in gross domestic product from one year to the next is included as in other research (e.g., Canes-Wrone, 2001, Brulle, Carmichael, & Jenkins, 2012). Additional variables exploring the robustness of narrative were tested in smaller models included in Appendix 7¹⁶.

Time Series Analysis

Negative binomial regression time series models with robust standard errors were chosen to estimate annual relationships between SoU climate change narratives and related

¹⁵ If data was not present for January of the year of interest the next closest poll was used. In every case when this occurred, polls from December or February were used. Only polls referring to the president who gave the SoU in that year were used to calculate presidential popularity.

¹⁶ Indicators of public opinion (e.g., McCright & Dunlap, 2011, Brulle et al., 2012), media attention e.g., (Boykoff & Boykoff, 2007), and lobbying (e.g., Brulle, 2018) are explored because they have been identified in past research. These variables are excluded from the primary models presented in this paper due to the small number of observations, just 70 years, and also because of the limited historical data for these variables. These models largely maintain findings of interest for narrative which are displayed in Table 12 and discussed below. Specific results for these additional variables and models are presented in Appendix 7.

Congressional hearings. Summary statistics are presented in Table 11. Since SoU occur once a year and occur in the first month of the year (generally), the annual unit of observation imposes a time specific direction of causality between the variables. Negative binomial time series analysis was chosen because the dependent variable is measured in annual counts and the equidispersion assumption of Poisson is violated (see Table 11)¹⁷ and regression of counts data in these instances is likely to be biased and inconsistent (e.g., King, 1989). Negative binomial regression offers a distribution more flexible to these characteristics and provides better estimates (King, 1989). Furthermore, there are only 11 cases of no hearings, which are not thought to be structural. Robust standard errors are used as a conservative approach due to the likelihood of heteroskedasticity, which can have a stronger biasing effect in counts data (King, 1989). Variables were tested but not found to contain unit roots¹⁸. Table 11 summarizes the variables of interest.

Table 11. Summary Statistics for Annual SoU Statements, Narratives, Stories, & Congressional Air Pollution Hearings

Variable	N	Minimum	Maximum	Mean	Standard Deviation
Statements	70	0	11	1.26	2.64
Narratives	70	0	10	1.11	2.33
Story of Fear	70	0	8	0.77	1.72
Story of Hope	70	0	4	0.34	0.82
Hearings	70	0	61	9.8	11.83

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¹⁷ The equidispersion assumption is violated when the variance is larger than the mean.

¹⁸ Unit roots can cause inference problems in time dynamic data by causing spurious correlation (relationships between variables appear significant but are not causal because they are both rising or falling over time).

Results of these analyses presented in Table 12 support the proposed hypotheses. Since coefficients of negative binomial time models are difficult to interpret directly, their incident rate ratios are presented instead of regression coefficients. Incident rate ratios are interpretable as the factor by which the incidence of congressional hearings increase given a one unit increase in the independent variable.

Model I tested SoU climate change statements. Model I supported the hypotheses positing that narrative would be more effective than statements because statements were not related to congressional hearings. Indeed, neither of the statement variables in Model I were significant. The statement variable captured all climate change mitigation policy statements, including those that were narratives, both stories of fear and hope, as well. This finding is surprising, given PET-type research, including Lovett, Bevan, and Baumgartner's 2015 study, that did find relations generally across all issue areas. However, the design of this analysis differed from theirs in many important ways, including that they looked at pooled time series data and tested for short effects lasting only 3 months or less. However, if the SoU sets out the policy agenda of the President for the year and it is an effective mechanism, it is reasonable to conclude effects should span the year as well, especially if the agenda is being pursued in a meaningful way. This finding may also be due to the nature of climate change mitigation policy – that its complex content and framing effects are difficult to capture in a more general measure like statements.

Model II tests narratives by breaking up statements into narratives and non-narratives. The narrative variable includes only those statements coded as relevant to climate change including a hero, villain, victim, or beneficiary. Non-narratives lack characters but still include

climate change relevant information. NPF theory says narratives are useful in the policy process because their heuristic elements correspond to human cognitive processes. Narrative attention extends this argument by suggesting they are especially good at focusing attention in macropolitical institutions like Congress. Model II shows the narratives are indeed significantly related to climate change related congressional hearings with an estimated rate ratio of 1.15. According to this model, a one narrative increase in a SoU is related to a 1.15 rate increase for Congressional hearings. This finding was not dependent upon unified government. This finding supports NPF and narrative attention theory, that policy narratives should be useful in focusing policymaking attention.

Narratives during single-party control were not significant. This finding may appear to contradict findings in the substantive literature regarding the great level of polarization associated with climate change mitigation. However, an interpretation of these narratives as focusing attention instead of persuading policymaker attention can account for this finding. If hearings measure attention instead of policy preferences, it can be expected that narrative could still increase attention despite not having altered existing policy preferences. This lack of relationship between narratives in times of single party control of the government and congressional hearings is also interesting in light of Lovett, Bevan, and Baumgartner's (2015) research. They found that SoU issue attention, measured in terms of annual SoU statements, was related to relevant congressional hearings only in times of single party control. This finding supports the notion narratives are more effective at focusing attention than statements generally, especially in the case of climate change mitigation policy. Presidents must tell a good story to overcome polarizing effects of a divided Congress.

Model III was consistent with the hypotheses regarding the story types. Model III found that as hypothesized, stories of fear narratives, but not stories of hope narratives, were related to congressional hearings. The stories of fear variable captured those climate change mitigation SoU statements coded as narratives because they included characters and also emphasized problems and victims. Based on research in psychology and findings about framing in the substantive literature, it was proposed that stories of fear may focus congressional attention because of their potential to inspire feelings of anger or guilt in their emphasis of problems and victims. For this reason, their capability to focus congressional attention more effectively than narratives generally or statements was proposed. This notion was supported in these analyses. Stories of fear had an incident rate ratio of 3.72 – the largest in these analyses. However, stories of fear were only significant in times of single party control. This finding suggests attempts at eliciting anger or guilt may only be successful when the president’s congressional audience shares his beliefs.

The hope story narrative variables, those climate change mitigation related SoU statements which had characters and emphasized solutions, were not significant generally or during times of single party control of Congress. This finding supported the hypotheses, which was based on findings in the substantive and psychology literatures that suggested audiences may be put off by the particular characteristics of climate change mitigation policy and the suggested role of agency in policy preference persuasion. Since the nature of climate change mitigation policy solutions contradict beliefs of segments of American society, including both those who hold office and their constituents, and the usefulness of emphasizing agency would be to persuade instead of focus attention, it was hypothesized stories of hope would not be

related to increases in congressional hearings. Future research should explore the usefulness of these stories in policy persuasion and other domains.

Finally, the variable “unified,” or unified government, is also significant in all three models. Recall that this variable is a dichotomous indicator of single-party control of the Presidency and Congress. Unified government was significant in each model due to the distribution of years of single party control over these 70 years. In this data set, more instances of single-party control, or “unified” government, occur earlier in history and most incidences of congressional hearings occur more recently in time. This highlights some limitations of the approach used in this research to explore the relationship between climate change mitigation narratives and related congressional hearings. Annual counts in time series models limit the number of observations available for analysis¹⁹.

Table 12. Presidential Climate Change Narratives & Congressional Hearings, 1946-2015

	Model I	Model II	Model III
Statements	1.05		
Statements*Unified	1.17		
Narrative		1.15*	
Narrative*Unified		1.24	
Non-narrative		.862	
Non-narrative*Unified		.485	
Hope			1.11
Hope*Unified			.769
Fear			1.12
Fear*Unified			3.72*
Unified	.457**	.485*	.516*
Popularity	.990	.983	.980
Presidential Party	1.28	1.43	1.58
House Party	.78	.848	.947
Senate Party	1.33	1.37	1.38

¹⁹ Limitations due to degrees of freedom and access to annual data for other variables necessarily limited the amount of independent variables included in this model. Additional models are included in Appendix 7 as a robustness check.

GDP	.920	.947	.966
N	70	70	70
Pseudo R ²	.053	.059	.062

*** indicates $p < 0.001$, ** indicates $p < 0.010$, and * indicates $p < 0.05$

Discussion

Do SoU climate change mitigation narratives influence congressional attention? This research supports the idea that they do, but that some stories work better than others. Though narratives perform better in this analysis than statements, narratives focusing on solutions are not related to increases in hearings whereas those focusing on problems and victims are, but only during times of single party government control. This presents a complex and contextualized picture of the role of narrative in this macropolitical case, but one supported by the literature.

As is suggested in the NPF literature (Shanahan et al., 2017) and in the substantive environmental literature (e.g., Kellstedt et al., 2008, McCright & Dunn, 2014, Brulle et al., 2012), beliefs likely play an important role in the construction and reception of these narratives. This appears to be especially the case with stories of fear, which may elicit emotional responses that focus attention. Perhaps stories of fear driving the effects of narratives more generally, but further research will need to be conducted to identify what narrative strategies, if any, drive a general focusing effect of narratives in macropolitical climate change mitigation policy. It may well be that an additional strategy not examined in this paper accounts for this effect or that it is simply narrative construction itself that focuses attention regardless of the specific strategies involved.

Stories of hope may well diminish the effectiveness of narratives in the context of climate change mitigation policy, because of the nature of these solutions – that necessary components

of the policy solution include references to its complexity, cost and benefits distribution, and other “social liberal”-type cognitive frames (e.g., Lakoff, 2010). Since these components may be more willing to persuade instead of draw attention, they may be more useful in studying public opinion or subsystem policy beliefs, where narrative persuasion has been demonstrated previously (e.g., Jones, 2010, 2014, McMorris et al., 2018, Jones & Song, 2014). These stories may well be slowing down climate change mitigation policy image mobilizations in US macro politics, acting like a thermostat to quell a more general image, free of specific policy solutions, from “catching fire” and generating the type of attention and feedback effects to engender policy change.

Stories of fear may help a climate change mitigation policy image generate the kind of positive feedback it needs to engender policy change. However, this research suggests that in order for stories of fear to support this kind of movement, they will need to account for policy beliefs. In terms of macro politics and climate change mitigation, this likely means party affiliation. Perhaps the push federal policymaking needs in order to move on climate change mitigation policy is for Democrats to tell Democrats climate change stories about victims and problems and for Republicans to do the same. These stories will differ between the groups to account for differences in beliefs, both ontologically and specific beliefs about the roles of government, the economy, and the environment. Perhaps the recent government report detailing the negative economic impacts of climate change will help Republicans to leverage the specific kinds of problems their constituents care about (Irwin, 2019). Climate change impacts many Republican constituents, and although party leaders like President Donald Trump and Senator Ted Cruz have expressed doubt about the human impact and agency regarding the

changing global climate, other Republican leaders like former Secretaries of State James A. Backer III and George P. Shultz have advocated free-market approaches, including a carbon tax (Shultz, 2017).

Though the US has been unable to pass major climate change legislation, presidents are effectively communicating climate change mitigation policy using SoU narratives. However, according to this research the effects may be small. According to PET authors Jones and Baumgartner, policy images that successfully alter policy and remake issue subsystems must “catch fire,” engendering explosive levels of attention (Baumgartner & Jones, 2010). Perhaps in the case of climate change mitigation policy, there is simply not enough attention being delivered by presidents to Congress. Past research on agenda setting topics has found that relative focus on a topic is important for attention effects (e.g., Boydston, 2014). Additionally, economic conditions are known to impact support for climate change mitigation policy (e.g., McAdam, 2017), and the most recent major effort, the Waxman-Markey Bill, occurred in the same time as the Great Recession. Future efforts may be more successful given economic conditions, a focus on problems and victims accounting for partisan beliefs, and an increase in the amount of time dedicated to the topic.

Conclusion

This research finds support for the narrative attention ideas about NPF and PET that policy narratives can focus attention in macropolitical institutions like Congress. Furthermore, it explores narratives about climate change mitigation policy, finding that though the US has failed to pass major national climate change policy, presidents are attempting to set congressional agendas. This research tested attention in terms of the amount of statements presidents deliver

in SoUs, as well as their narratives, and stories of fear and hope. Based on the NPF connotation of what a policy narrative is, this study operationalized them in terms of a climate change mitigation statement that included human characters cast as heroes, villains, victims, or beneficiaries. Emerging from past narrative attention SoU research as well as the substantive and psychological research, stories of fear are operationalized as emphasizing problems and victims, whereas stories of hope emphasize solutions.

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Appendix 5

Table 13. Timeline of State of the Union Climate Change Policy Stances (1997-2016)

Administration	Year	Position
Clinton	1997	Ban chemicals threatening health & climate
	1998	Climate change requires worldwide action through market forces, new technology, and energy efficiency
	1999	Government to reward companies voluntarily reducing greenhouse gasses
	2000	Cut greenhouse gas emissions and grow economy with new technologies
Bush	2007	New technologies will reduce our dependence on oil and confront climate change
	2008	Address energy security & climate change with an international agreement; US will continue leading the world in the development of clean & energy efficient technology
Obama	2009	Transform the economy with renewable energy development to ensure security and protect against climate change
	2010	Pass an energy & climate change bill to incentivize clean energy
	2012	Though Congress is too divided to pass comprehensive legislation, they should set clean energy standards as a market incentive; Since Congress has not acted, the administration will open up public lands for clean energy development; Government commitment to use clean energy
	2013	Congress should develop market-based solution to climate change
	2014	Invest in natural gas to address climate change; Reduce carbon pollution with new regulations
	2015	International cooperation to more quickly reduce carbon pollution; Protect against congressional action to undermine climate change mitigation efforts
	2016	Develop and invest in clean energy sources to combat climate change, especially in communities reliant on fossil fuel industries; Lead international efforts to combat climate change

Appendix 6

Narrative Climate Change Image Codebook

Instructions: For each State of the Union statement indicate the presence of each code. Code “1” if the content category applies and “0” if it does not. Each statement may receive no more than one code per content category.

1) Climate Change Policy Statement

Explanation: Climate change policy relevant statements include references both to the problem of climate change and the energy-related causes and solutions.

Indicate if the statement includes any of the following terms: “climate change,” “carbon,” “emission,” “greenhouse,” “clean energy,” and “clean coal.”

2) Narrative Structure

Explanation: Narrative Policy Framework (NPF) studies often operationalize policy narratives in terms of a character and policy referent.

Indicate if the statement includes a character using the following definitions:

A) Hero – Enter the exact wording of a person or group cast as responsible for promoting a policy solution. This may be promotion implied by fighting a villain or helping a victim.

B) Villain – Enter the exact wording of a person or group cast as responsible for promoting a policy problem or errant solution. This may be promotion implied by fighting a hero or hurting a victim.

C) Victim – Enter the exact wording of a person or group cast as hurt by another character, policy problem, or solution.

D) Beneficiary – Enter the exact wording of a person or group cast as benefiting from the actions of another characters, policy problem, or solution.

3) Story Type

Explanation: Previous research (Peterson, Under Review) has identified stories emphasizing solutions or problems and victims as narrative strategies in State of the Union speeches.

Indicate if statements that include characters have one of the following story types, selecting only the best fitting type for each statement:

A) Story of Hope – The climate change narrative emphasizes public policy solutions, values, normative positions, or moral positions.

B) Story of Fear – The climate change narrative emphasizes public policy problems, challenges, dilemmas, or disputes, and/or victim characters.

Coding Notes:

- Manifest coding is employed but pronoun identification may be gathered from adjacent sections.

Appendix 7

Robustness Checks

1) Media

Table 14. Presidential Climate Change & Congressional Attention, 1946-2014

	Model I	Model II	Model III
Statement	1.14*		
Statement*Unified	1.02		
Narrative		1.23**	
Narrative*Unified		.981	
Non-narrative		.630	
Non-narrative*Unified		1.16	
Hope Story			1.24*
Hope*Unified			.790
Fear Story			1.03
Fear*Unified			1.88 ⁺
Unified	.579*	.595*	.604*
GDP	.975	1.00*	1.00
Media	1.10**	1.12	1.11***
N	69	69	69
Pseudo R ²	.091	.098	.096

*** indicates $p < 0.001$, ** indicates $p < 0.010$, * indicates $p < 0.05$, and ⁺ indicates $p < 0.10$

The model in Table 14 includes a proxy for media attention – an index of environmental attention in the New York Times. This data was obtained from the CAPs website (comparativeagendas.net). The relationships of interest for narrative are maintained, but story of hope gains significance and single-party story of fear losses significance. It is worth noting that the Fear*Unified variable is nearly significant at the $p < 0.10$, with a p value of .089. Additionally, attention is significant in this model. These findings indicate a potentially fruitful future exploration of the roles of the stories of hope and fear regarding other macro political actors like the media.

2) Oil & Gas Lobbying

Table 15. Presidential Climate Change & Congressional Attention, 1990-2015

	Model I	Model II	Model III
Statement	1.05		
Statement*Unified	.791		
Narrative		1.13*	
Narrative*Unified		.961	
Non-narrative		.956	
Non-narrative*Unified		.595	
Hope			1.12*
Hope*Unified			1.19 ⁺
Fear			1.33*
Fear*Unified			1.19
Unified	.791	.880	.992
Lobbying	.000*	.000*	.000**
GDP	.758***	.797**	.797*
N	26	26	26
Pseudo R ²	.128	.011	.120

*** indicates $p < 0.001$, ** indicates $p < 0.010$, * indicates $p < 0.05$, and ⁺ indicates $p < 0.10$

The model summarized in Table 15 includes a proxy for lobbying – the dollar amount spent each year by fossil fuel companies lobbying Congress according to OpenSecrets.org over the 26 year period from 1990 through 2015. The relationships of interest for narrative and statements are maintained. However, the significant fear story variable in this model is not dependent upon a single-party government and the story of hope variable becomes significant as well. This indicates a potential for fruitful future research on the modern hope and fear story and their relationship to other macro policy actors like lobbyists.

3) Public Opinion (Climate Change)

Table 16. Presidential Climate Change & Congressional Attention, 1995-2015

	Model I	Model II	Model III
Statements	.913*		
Statements*Unified	1.20**		
Narrative		1.00*	
Narrative*Unified		.893	
Non-narrative		.894	
Non-narrative*Unified		.556	
Hope			1.064
Hope*Unified			.826
Fear			.840 ⁺
Fear*Unified			3.28**
Unified	.331*	.402 ⁺	.374*
GDP	.814*	.888	.970
Public Opinion	1.08***	1.089*	1.081*
N	20	20	20
Pseudo R ²	.124	.087	.106

*** indicates $p < 0.001$, ** indicates $p < 0.010$, * indicates $p < 0.05$, and ⁺ indicates $p < 0.10$

The model summarized in Table 16 includes a proxy for public opinion about climate change seriousness. The variable “Public Opinion” measures the percentage of Americans who think climate change is a problem since 1995 as collected in Gallup polls. This data was obtained from the summary report published by Bowman and O’Neil (2017). The relationships of interest for narrative, story of fear and hope are maintained. However, narratives in times of single party control are also significant at the $p < 0.10$ level, indicating a possible role for public opinion and the polarization of narrative effects. Additionally, this model suggests that public opinion in modern times might also support a role for statements and stories of fear both in times of single-party control and otherwise. These models suggest emergent trends in the past 20 years.

General Conclusion

The idea of narrative power in public policy is well established historically. Ancient societies like the Chinese, Egyptians, and Greeks studied and proposed rules for rhetorically communicating political ideas. As a young literature student, I was amazed to learn ancient writers categorized rhetorical behaviors they witnessed in order to define best practices. They captured and deployed rhetorical strategies in the wild, like explorers, instead of building and testing them in laboratories like scientists. Later, as a graduate student learning about the great impact of cognitive heuristics on information processing, I began to imagine ancient rhetoricians had understood human cognitive limitations well. The idea of narrative cognition embraces the notion that people communicate in narratives because we think with them. They help us to make sense of our enormously complex world. For this reason, it makes sense to listen to the stories people tell when investigating storytelling strategies.

This dissertation emerged from the narrative tradition and boundedly rational conception of human cognition to investigate the power of institutional venues in channeling narrative policy images. It seeks to establish the common wisdom expressed contemporarily of narrative importance in sound reasoning and empirical demonstration. Paper I detailed the rationale for narrative attention in contrast to narrative persuasion as a causal mechanism by which policy images impact policy processes. Paper I proposed narrative attention as the causal mechanism by which macropolitical institutions, like the Presidency and Congress, channel policy ideas, sometimes growing them with mobilizations, which allow for ideas to come under policymaking consideration. By focusing fresh attention to policy ideas instead of persuading actors to change their minds, narratives help policy images gain support from previously

apathetic actors and venues as well as activate unengaged preferences in already attentive audiences. The idea of narrative attention explains institutional narrative policy image dynamics.

Paper II continued the theoretical explanation of narrative attention, extending a rationale for narrative policy images, exploring narrative conceptualization of policy images theoretically and empirically. To explore narrative attention in institutions, Paper II captured narrative policy images in the wild, collecting them from Presidential policy addresses targeting Congress. Once collected, Paper II analyzes the macropolitical narratives for trends to determine whether they are consistent with expected characteristics based in the policymaking and substantive literature. The narratives did exemplify expected partisanship and distribution characteristics. Additionally, the detail provided by a narrative conceptualization identified two narrative strategies previously undocumented, the “story of fear” emphasizing problems and the “story of hope” emphasizing solutions. These narrative strategies are likely particular to institutional settings, where their context has implications for institutional policymaking strategies.

Lastly, Paper III expanded the collection of macropolitical narratives, focusing on a particular issue – climate change. Using the narrative policy dynamics posited in Paper I and the narrative strategies and narrative policy image conceptualization identified in Paper II, Paper III tests whether or not agenda setting policy images from one macro institutional actor, the President, are impacting his macropolitical audience in another macro institutional actor, Congress. Results largely support expectations based on the policymaking and substantive literatures that narratives are more impactful than statements, that stories of fear are the most impactful, but are conditional on unified government, and that stories of hope do not impact

Congressional air pollution hearings. The empirical analysis in Paper III is limited by the nature of the data. Future investigations leveraging data with more available observations and control variables, in addition to experimental design, are needed to establish empirical generalizability. Additionally, explorations and investigations of narrative attention, institutional narratives, and institutional narrative strategies in more contexts and cases are needed to further establish conceptual generalizability.

The nature of policy ideas and human cognition suggests researchers must sometimes leave the lab and explore natural narrative phenomena in order to investigate the dynamics of ideas, rhetoric, and policymaking, especially in institutions. Like the ancient rhetoricians, social scientists must become familiar with the substantive realities of the theoretical phenomena they study in order to accurately and reliably explain them. This dissertation seeks to utilize the characteristics of both the narrative tradition and public policy study in its theoretical and empirical design, drawing heavily upon both the public policy and substantive literatures in establishing research expectations and testing these on actual policymaking narratives. While contributing to the theoretical development of policy narratives, a first step is made toward substantive investigation of narrative attention and investigation of natural narrative phenomena, which will be further developed in the future.