# Political Information in Bureaucratic Policymaking

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## Abstract

This dissertation is about ordinary people's input on policies made by bureaucrats. I make three main contributions:

First, drawing on scholarship on social movements, interest group behavior, and lobbying, I identify three distinct reasons for lobbying organizations to mobilize ordinary people. Each logic suggests a different observable pattern of mass public engagement, and I analyze millions of public comments on thousands of agency rules to develop the first systematic measures of patterns of mass engagement in bureaucratic policymaking.

Second, building on theories of political oversight, I theorize that mass public engagement in bureaucratic policymaking may alert elected officials to political opportunities and risks, affecting oversight behavior. I assess this argument by analyzing correspondence between Members of Congress and bureaucrats on proposed rules with and without mass engagement.

Third, I integrate these intuitions about outside lobbying and oversight into a broader theory of how mass mobilization may affect policy by producing potentially influential political information. I suggest four causal mechanisms by which lobbying may influence bureaucrats. Thus far, theories of rulemaking have focused on the power of technical information, where insider lobbying is most likely to matter and outside lobbying is least likely to matter. As a result, political scientists have largely overlooked mass engagement. This gap suggests that incorporating theories of social movement influence may advance bureaucratic politics scholarship and that bureaucratic politics may be fertile ground for testing social movement theory. To address this gap, I use my new measures of mass engagement and oversight to assess the effect of political information on rulemaking and rules.

Finally, two supplemental chapters assess causal processes through a case study of the role of the environmental justice movement in rulemaking and an analysis of rulemakings where organizations randomly select lobbying strategies.

# Contents

# Summary

**Motivation:** Leading models of influence in bureaucratic policymaking focus on two key political forces: sophisticated interest group lobbying and political oversight. As bureaucrats learn about policy problems and balance interest-group demands, public comment processes allow lobbying organizations to provide useful technical information and inform decisionmakers of their preferences on draft policies. Agencies may then update policy positions within constraints imposed by their political principals.

While this may describe most cases of bureaucratic policymaking, these models do not explain or account for the contentious politics that occasionally inspire millions of ordinary people to respond to calls for public input on draft agency policies. Mass engagement in bureaucratic policymaking has thus largely been ignored by political scientists, leaving a weak empirical base for normative and prescriptive work. Like other forms of mass political participation, such as protests and letter writing campaigns, mass public comments on draft agency rules provide no new technical information. Nor do they wield any formal authority to reward or sanction bureaucrats, as comments from a Members of Congress might. The number on each side, be it ten or ten million, has no legal import for an agency's response. Yet agencies occasionally receive input from a large number of ordinary people. How, if at all, should scholars incorporate mass engagement into models of bureaucratic policymaking?

I argue that mass engagement results from interest groups' strategic choices. When lobbying organizations have an opportunity to shape policy, resources to mobilize, and broader support than their opposition, outside lobbying ("going public") may produce valuable, politically-relevant information. Depending on how agencies process political information, outside lobbying may influence policy, both directly and indirectly. For example, those lobbying in rulemaking often make suspect claims to represent broad segments of the public. Mobilizing a large number of people may directly support such claims. Indirectly, it may alert elected officials to political risks and opportunities, affecting oversight behavior.

Does mass engagement in bureaucratic policymaking affect policy? This question drives my project. However, two questions must be answered first: (1) Why does it occur? and (2) How does it affect the oversight behaviors of agencies' political principals? These questions drive two initial empirical chapters. I then use my new measures of the political information that lobbying coalitions create by going public to test whether mass engagement explains variation agency rulemaking and rules.

**Step 1. Why do agencies (occasionally) get so much mail?** Why do people comment on draft policies when they seem to have no new information to offer and no power to influence decisions? Who inspires them and to what end? Answering these questions requires a theory explaining variation in mass engagement and method to link comments to the lobbying coalitions that mobilized them. To link individual comments to the more sophisticated lobbying efforts they support, I use text reuse and Bayesian classifiers to identify clusters of similar comments, reflecting formal and informal coalitions. I

argue that activists' resources, opportunities, and public support explain variation in mass engagement. Coalitions will go public when they are disadvantaged in insider politics but have more support than opposing coalitions. More public support yields more engagement, more effort per comment, and contagion beyond those mobilized directly. Coalitions with less support may counter-mobilize with smaller effects. Specifically, dependent variables include (1) comments per coalition, (2) effort per comment, (3) share of comments per coalition mobilized indirectly (i.e. the potential for conflict spread). Next, I test whether variation in engagement explains variation in oversight behavior (step 2) and policy outcomes (step 3).

**Step 2. Does mass engagement affect political oversight?** The political information signaled by mass engagement may serve as a "fire alarm," altering principals to oversight opportunities or a "warning signs" altering them to political risks. When a coalition goes public, principals ought to be more likely to engage on their behalf and less likely to engage against them. To assess these hypotheses, I count the number of times Members of Congress engage the agency before, during, and after comment periods on rules where lobbying organizations did and did not go public. I then use text analysis to compare legislators' sentiments and rhetoric to that used by each coalition. Dependent variables include (1) the number of comments from Members of Congress on the rule (2) the share of supportive congressional comments, (3) the similarity of words in comments from the coalition and Members of Congress.

**Step 3. Does mass engagement affect rulemaking and rules?** I theorize that the effects of political information on policy depend on the extent to which the strategic environment allows change and how political information is processed, both directly within agencies and indirectly through other actors (e.g. Members of Congress) whose appraisals matter to bureaucrats. The main dependent variable is change in the rule text. I will systemically identify changes between draft and final rules, parse these differences to identify meaningful policy changes, and compare them to demands raised in comments to measure which coalition got their way. However, assessing policy change is difficult. Thus, I will also use other measures of agency responses to lobbying efforts.

    **Assessing causal mechanisms:** While it may be impossible to causally identify or attribute effects to normative or strategic mechanisms, a focus on political information suggests places to look for influence in rulemaking. For example, if Members of Congress are not more likely to voice support for a coalition that goes public, this would be evidence against any indirect mechanism via congressional oversight.

To supplement the core design above, the two additional chapters explore historical and experimental case studies. My historical case is the environmental justice movement, relying on all rules where "environmental justice" is raised in the comments and quantitative and qualitative assessment of agency responses. I find that responsiveness varies across agencies. My experimental cases will be rules selected by organizations that have agreed to randomly assign specific targets of their mass comment campaigns. In exchange, I will use the methods outlined above to estimate the effects of their interventions.

# 1  Introduction

Democracies face two big problems. First, they are vulnerable to fleeting passions and demagogues. To combat this, they leave many decisions to experts who, ideally, exercises judgment loosely guided by the public. Second, everyone cannot vote on every decision. Thus, they delegate power to representatives (who then delegate it to deputies), create temporary mini-publics, and solicit input from those most affected or moved by a public decision.[1] Most policy is then made by bureaucrats, supposedly guided indirectly through elected representatives and directly by limited public input (mostly limited to highly contentious policy debates). By one estimate upward of 90% of legally binding U.S. federal policy is now written by agencies (West and Raso 2013).

With the rise of the administrative state, U.S. federal bureaucracy has become a major site of policymaking and political conflict. Agency rules are revised much more frequently than statutory law (Wagner et al. 2017) and in the years or decades between legislative enactments, federal agencies make legally-binding rules interpreting and reinterpreting old statutes to address emerging issues and priorities. Examples are striking: The effect of the Dodd-Frank Wall Street Reform and Consumer Protection Act was largely unknown until the specific regulations were written, and it continues to change as these rules are revised. Congress authorizes billions in farm subsidies and leases for public lands, but who gets them depends on agency policy. In the decades since the last major environmental legislation, agencies have written thousands of pages of new environmental regulations and thousands more changing tack under each new administration. These revisions significantly shape lives and fortunes. For example, in 2006, citing the authority of statutes last amended in the 1950s, the Justice Department's Bureau of Prisons proposed a rule restricting eligibility for parole. In 2016, the Bureau withdrew this rule and announced it would be requiring fewer contracts with private prison companies, precipitating a 50% loss of industry stock value. Six months later, a new attorney general announced these policies would again be reversed, leading to a 130% increase in industry stock value. Rulemaking clearly matters.

Less clear, however, is how the new centrality of agency rulemaking fits into American democracy. In addition the bureaucracy's complex relationships with the president and Congress, agencies have complex and poorly understood relationships with the public and advocacy groups. Relationships with constituent groups may even provide agencies with a degree of "autonomy" from their official principals (Carpenter 2001).

Expertise, delegation, and limited public input converge in bureaucratic policymaking, where bureaucrats are required to use reasoned judgment, be accountable to elected officials, and be responsive to public input. There is no normative consensus on how to rank or merge these aims (Wilson 1967),

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[1] As imagined by Dahl (1989), mini-publics are representative, selected at random, and deliberative. Besides juries, however, deliberative and randomly-selected bodies are rare. Instead, citizens more often engage in government decisions when given opportunities to opt-in, such as hearings, petitions, and public comment periods. These mechanisms of engagement generate a different, more contentious flavor of public input than the discourse imagined by scholars who focus on deliberation.

and administrative procedures for gathering public input and their justifications cite all three. Processes like notice and comment rulemaking are said to produce valuable technical information (Yackee 2006; Nelson and Yackee 2012), oversight opportunities (Balla 1998), and democratic legitimacy (Croley 2003; Rosenbloom 2003). The Administrative Conference of the United States (ACUS) Proposed Recommendation on Public Engagement in Rulemaking claims that "The opportunity for public engagement is vital to the rulemaking process, permitting agencies to obtain more comprehensive information, enhance the legitimacy and accountability of their decisions, and enhance public support for their rules" (ACUS 2018).

Yet, legitimacy, accountability, public support, and especially collecting information depend not just on the opportunity to engage but actual engagement (Herz 2018), and we know surprisingly little about the input of ordinary people and the role it may or may not play in rulemaking.[2]

The contentious politics that inspire ordinary people to engage have no place in leading models of bureaucratic policymaking and have largely been ignored by political scientists. Instead, models focus on how agencies either learn about policy problems, negotiate or avoid accountability to various principals, or balance interest-group demands.[3]

Foundational scholarship on rulemaking by Furlong and Kerwin (2004), Furlong (1997, 1998), and Kerwin and Furlong (2011) focuses on interest group lobbying. To the extent they address it at all, both theory and empirical scholarship suggest skepticism that the input of ordinary people matters. Empirical scholarship finds that economic elites and business groups dominate American politics in general (Gilens and Page 2014) and rulemaking in particular (Crow, Albright and Koebele 2015; Wagner, Barnes and Peters 2011; West 2009; Yackee and Yackee 2006; Yackee 2006; ?; Golden 1998; Haeder and Yackee 2015). While some suggest that requirements for agencies to solicit and respond to public comments on proposed rules allow "civil society" to provide public oversight (Michaels 2015; Metzger 2010), others find that participants in rulemaking often represent elites (Seifter 2016) and business interests (Yackee and Yackee 2006). From a strategic perspective, agency officials are not directly accountable to voters. And even if organized groups do supplement congressional and judicial checks on executive power, the groups that participate in rulemaking represent only certain (if any) citizens and may not represent them well (Seifter 2016). Mass comment campaigns are thus dismissed as epiphenomenal to bargaining with principals or interest groups. Indeed almost all empirical studies discard unsophisticated comments from ordinary people–i.e. not professional policy influencers. Despite the skepticism assumed by scholars,

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[2] But see Yackee (2015), who surveys commenters, finding that members of the public believe their comments matter, even though powerful groups have more influence; Cuéllar (2005), who examines three rules, finding that ordinary people made up the majority of commenters; and Balla et al. (2018), who find significant participation from ordinary people in a case study of EPA rulemaking.

[3] On learning, see Yackee (2012) and Libgober (2018) for an information-based model where commenting reveals information to the agency.

On accountability to elected officials, see Furlong (1997), Nou and Stiglitz (2016), Potter (2016), Woods (2018), and Yackee and Yackee (2009). For example, Potter (2014) presents a signaling model where agencies propose and principals veto rules depending, in part, on their beliefs about interest group preferences.

On interest group balancing see Yackee and Yackee (2006), Yackee (2006), and Kerwin and Furlong (2011).

Yackee (2015) finds that ordinary participants strongly believe that their comments matter, even if they see businesses as more influential. Without systematic understanding and study of public participation, it is difficult to adjudicate debates about how processes like notice and comment rulemaking may enhance or undermine various democratic ideals.

This scholarly oversight is surprising given that most people are only aware of rulemaking when it is the target of a high-profile mass mobilization campaign.[4] While most rules receive little attention, the ease of online mobilizing and commenting has, like other forms of participation (Boulianne 2018), created exponential increases in the number of rules in which thousands and even millions of people engage (see figure 2; note that comments per rule are on a logarithmic scale).[5] Occasionally, a large number of people are paying attention.

The general failure to explain or account for mass engagement in rulemaking is also striking in light of how agencies advertise public comment periods as an opportunity for a voice in government decisions.[6] Big red letters across the top of the Regulations.gov homepage solicit visitors to "Make a difference. Submit your comments and let your voice be heard" (Figure 1). A blue "Comment Now!" button accompanies a short description of each draft policy and pending agency action. Another invitation at the bottom of the page reads "Participate today!" Public commenting on proposed agency rules is described as "an important part of democracy" (WSJ 2017), the "purest example of participatory democracy in actual American governance" (Herz 2016). Rossi (1997) finds that "courts, Congress, and scholars have elevated participation [in rulemaking] to a sacrosanct status...greater participation is generally viewed as contributing to the democracy." Yet despite much debate about the theoretical import and possible reforms, the bulk of public comments have yet to be studied.

Legal scholars have long debated what to make of mass commenting in rulemaking. Many focus on reforms to help agencies collect more useful information (Farina et al. 2011; Farina, Newhart and Heidt 2014; Rauch 2016). In 2018, "Public engagement" was main project of the Administrative Conference of the United States (ACUS) committee on Rulemaking: The project

"explores agency strategies to enhance public engagement prior to and during informal rule-

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[4]Some of the most contentious recent public controversies involve bureaucratic policymaking. For example, along with 50 thousand protesters in Washington D.C., the State Department Received 1.2 million comments on the Environmental Impact Statement for the Keystone Pipeline. Similarly, along with the thousands of protesters supporting the Standing Rock Sioux protest to the Dakota Access Pipeline, the Army Corps of Engineers received hundreds of thousands of comments. Alongside protest actions that included shutting down many websites, the Federal Communications Commission's open internet rule received 22 million comments. While some of these comments appear to be fake, the scale of public engagement is remarkable given how little attention political scientists have paid to it. Fake public comments also raise the question of why an organization would bother to generate fake public input if it did not matter, as its omission from theories of bureaucratic policymaking would seem to imply.

[5]Proposed rules that have attracted the most public attention have been published by the Federal Communications Commission (FCC, omitted from this plot), the Environmental Protection Agency (EPA), the Department of Interior (DOI), the Bureau of Ocean Energy Management (BOEM), the Consumer Financial Protection Bureau (CFPB), and Fish and Wildlife Service (FWS).

[6] I focus on public comments in rulemaking, but my theory and methods also apply to other kinds of political engagement such as through social media or protests as well as to other political decisions, including state-level rulemaking. Social media engagement may be especially important if agencies implement the recommendations of ACUS (2018) that "Agencies should consider using social media before or in connection with direct final rulemaking to quickly identify whether there are significant or meaningful objections" (p. 34).

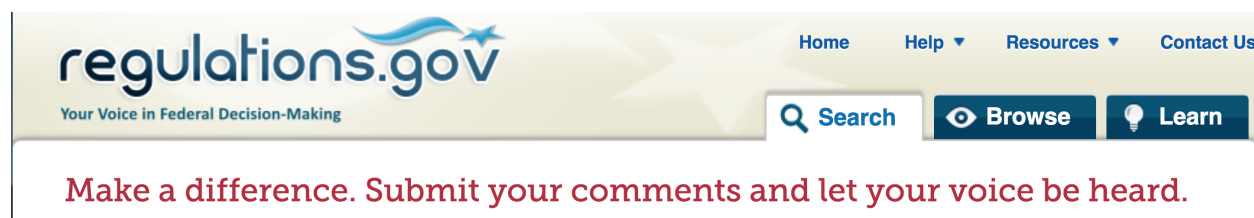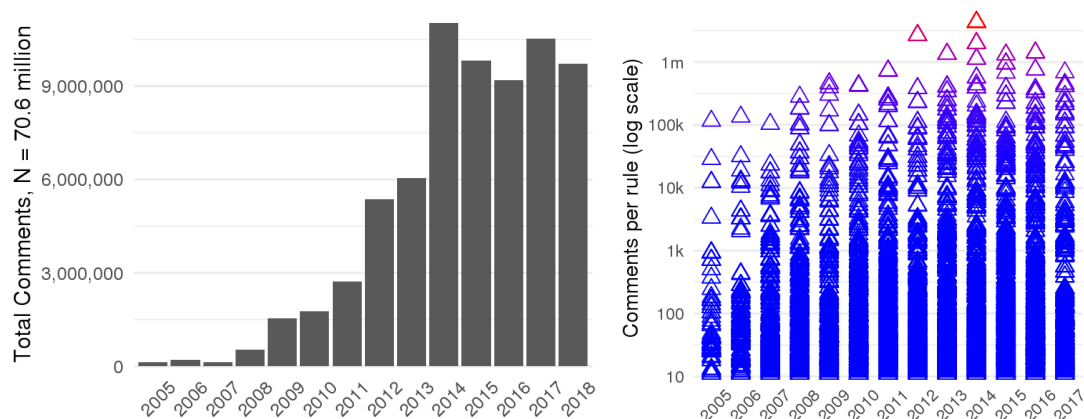Figure 1: Regulations.gov Solicits Public Comments on Draft Agency Rules



Figure 2: Comments on Proposed Rules per Year (left) and per Rule (right) posted on regulations.gov



> making. It seeks to ensure that agencies invest resources in a way that maximizes the proba-
> bility that rulewriters obtain high-quality public information."

Among other things, this committee is debating how to encourage "quality public information," how "to get new people/groups into the real or virtual room" (Farina 2018), and whether broad engagement is even desirable on all rules (White 2018). Administrative law scholars have explored these questions for decades. Mendelson (2011) finds that agencies often discard non-technical comments but argues that they should be given more weight. Others worry that mass commenting distracts agencies from good policy and the broader public interest (Coglianese 2006). Farina et al. (2012: p. 112) argues that "[Mass] comments typically are neither factually informative nor reliable indicators of citizens informed value preferences." Rossi (1997) argues that public comment processes should be largely eliminated. Herz (2016: p. 208) concludes "The goal of e-rulemaking is to more fully capture such credible, specific, and relevant information, not to solicit the views of random, self-nominating members of the public." Early optimism among legal scholars that the internet would "change everything" (Johnson 1998) and that "cyberdemocracy" would enable more deliberative rulemaking has faded. While commenting and encouraging others to comment has become easier, Coglianese (2006) finds that little else has changed. Here, the prediction that the internet would merely facilitate engagement among the like-minded (Sunstein 2001) has largely been correct. Mass comment campaigns are thus often called "spam" (Balla et al. 2018).

In this prevailing view, "high-quality" and "relevant" mean novel technical information, not opinions. Even scholars suggesting reforms aimed at "regulatory democracy" aim to increase the "sophistication" of ordinary peoples' comments (Cuéllar 2014). Notably, the ACUS draft recommendations on "Mass and Fake Comments in Agency Rulemaking" suggests that "effective comments" give "reasons rather than just reactions" (ACUS 2018: p. 33). If true, public reactions to proposed rules such as mass comments would have no effect in rulemaking.

While this scholarship has improved the theory and practice of policy learning in rulemaking, focusing on sophisticated deliberation and technical information overlooks the potential role of political information.[7]

## 2 Theory

**Incorporating mass engagement into theories of bureaucratic policymaking.**  How, if at all, should scholars incorporate mass engagement into models of bureaucratic policymaking? I argue that mass engagement produces potentially valuable political information about the coalition that mobilized it. Thus, depending on how agencies process political information, "going public" may occasionally be an effective strategy for organizations to influence policy, both directly and indirectly.

**Dissertation outline.**  Does mass engagement in bureaucratic policymaking affect policy? This question drives the my project. However, two questions must be answered first: (1) Why does it occur? and (2) How does it affect political oversight? These questions drive two initial empirical chapters. Thus, my analysis has three steps.

The next section builds a causal theory for each step. First, I theorize that activists' opportunities and strategies and latent public opinion drive engagement. Second I theorize that variation in mass engagement will lead to variation in political oversight. Third, I theorize that mass engagement may affect rulemaking both directly, and indirectly via its affect on political oversight.

The following section outlines methodologies to assess my three overarching questions and their component parts. Theses methods rely on analysis of comment and policy texts as large-n observational data.

To explore causal arguments, the last two chapters of the dissertation will explore historical and experimental case studies. My historical case is the environmental justice movement, relying on all rules where "environmental justice" is raised in the comments and quantitative and qualitative assessment of agency responses. This prospectus includes preliminary analysis of the environmental justice case study. I find that responsiveness to activist comments varies in predictable ways across agencies but I find no evidence that the total number of comments affects rules. My experimental cases are not included in this

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[7]but see insights from Golden (1998), Nelson and Yackee (2012), and Rauch (2016) on political information and Reich (1966) and Seifter (2016) on representation reviewed below.

prospectus. They will be rules selected by organizations that have agreed to randomly assign specific targets of their mass comment campaigns. While these few cases will not provide necessary power for statistical tests, the responses of the public, elected officials, and rulewriters may help illuminate causal mechanisms.

## 2.1 Step 1: Why agencies (occasionally) get so much mail

Why do people comment on draft policies when they seem to have no new information to offer and no power to influence decisions? Who inspires them and to what end?

Answering these questions requires a theory explaining variation in mass engagement. This section defines mass engagement and theorizes that we should observe different patterns of engagement depending on whether an organization launches a mobilization campaign as an outside lobbying tactic, to counter such a campaign, or for reasons other than influencing policy. In the next section, I develop methods to measure these patterns.

As noted above, scholars of bureaucratic policymaking have focused on the sophisticated lobbying efforts of powerful interest groups such as business coalitions. A key insight from this scholarship is that technical information is the currency of insider lobbying. Figure 3 illustrates the classic causal model of insider lobbying that describes most rulemakings. However, mass engagement has no place in this model. I aim to fill this gap.

Figure 3: The Classic Model of Interest Group Lobbying in Bureaucratic Policymaking
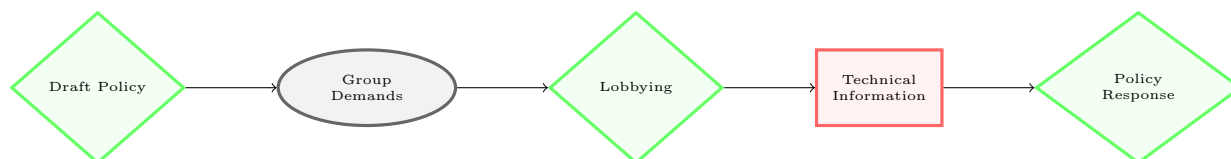


### 2.1.1 Defining mass engagement

Political scientists often define civic engagement as writing to government officials, signing petitions, attending hearings, attending protests, or donate to a political campaign (**?**). While donating is more common in electoral politics, activists frequently target agency policymaking with letter-writing campaigns, petitions, hearings, and protests.

Following the conventional terms "mass comment campaign" and "public engagement," I call the general phenomenon "mass engagement" resulting from a "mass mobilization campaign" in order to distinguish the magnitude of civic engagement. By mass engagement, I mean that thousands of people beyond professional policy influencers engage. Specifically, I define mass

engagement as more than 1000 public comments or 100 identical comments, plausibly reflecting a mobilization effort.

Contrary to the common assumption that this emerges organically, it is almost always mobilized by an organization that also engages in sophisticated lobbying. As Sant'Ambrogio and Staszewski (2018) conclude "The 'mass comments' occasionally submitted in great volume in highly salient rulemakings are one of the more vexing challenges facing agencies in recent years. These comments are typically the result of orchestrated campaigns by advocacy groups to persuade members or other like-minded individuals to express support for or opposition to an agency's proposed rule." To better understand this vexing challenge, I offer a framework for assessing the causes of mass engagement. In the remainder of this section, I argue that organizations may mobilize large numbers of people for three reasons with observable implications for observed patterns of mass engagement and theoretical implications for predicted effects on policy. I then explain why

### 2.1.2   Types of campaigns

The outcomes of mass mobilization depend, in part, on the aims of a campaign. Campaigns may have one of three distinct aims: (1) to win concessions by going public, (2) to disrupt a perceived consensus, or (3) to go down fighting. Going public and disrupting a perceived consensus are forms of outside lobbying, the former proactive, the later reactive. Gowing down fighting describes a situation where the organization does not expect to influence policy but mobilizes for other reasons.

**Going public.** Coalitions "go public" when they believe that expanding the scope of conflict gives them an advantage.[8] As these are the coalitions that believe they have more intense public support[9], many people may be inspired indirectly and to engage with more effort. In these cases, mass engagement is likely to skew heavily toward this side. This is important because a perceived consensus may be especially influential political information.[10]

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[8] "Going public," "outside lobbying" or an "outside strategy" contrasts with insider lobbying. It is used by Presidents (Kernell 2007), Members of Congress (Malecha and Reagan 2012), interest groups (Walker 1991; Dür and Mateo 2013), Lawyers, and Judges (Davis 2011). For example, organizations may use phone banks, targeting strategies, and direct-mail techniques to drum-up and channel public support (Cooper 1985).

[9] This strategy is likely to be used by those disadvantaged (those Schattschneider (1975) calls the 'losers') with less public attention. Rulemaking with little public attention is the norm and nearly all scholarship on rulemaking in political science thus focuses on interest-group and inter-branch bargaining, ignoring public opinion and social movements.

[10] For example, consensus among interest groups (Golden 1998; Yackee 2006), especially business unity (Yackee and Yackee 2006; Haeder and Yackee 2015), predicts policy change, though it is not clear if this is a result of strategic calculation, a perceived obligation due to the normative power of consensus (e.g. following a majoritarian (Mendelson 2011)), or simply that the information is easier to process.

**Hypothesis 1a:** *Lobbying coalitions mobilize mass engagement when they perceive that the attentive public is on their side, have sufficient resources, and perceive an opportunity to influence policy.*

**Disrupting a perceived consensus.** Second, because the perception of consensus is powerful, when a coalition goes public, an opposing coalition may countermobilize. As this is likely a coalition with less intense public support and its aim is merely to break a perceived consensus, I expect such campaigns to engage fewer people, less effort per person, and yield a smaller portion of indirect engagement.

**Hypothesis 1b:** *When a lobbying coalition with more intense public support mobilizes successfully in response to an opportunity to influence policy, opposing coalitions with less public support are more likely to counter-mobilize, but at a proportionally smaller scale.*

**Going down fighting.** Finally, campaigns may target supporters rather than policymakers. Sometimes organizations "go down fighting" to fulfill supporters' expectations. I use "going down fighting" as shorthand for campaigns aimed at only at fulfilling member, donor, or supporter expectations and related logics that are internal to the organization, including fundraising, member retention or recruitment, or satisfying a board of directors. For example, as figure 4 shows, the Sierra Club uses campaigns to collect contact information of supporters and potential members. In this case, given the executive-branch transition between 2010 when the rule was initiated and 2017 when it was delayed, the Sierra Club may have had little hope of protecting methane pollution standards, but for members of the public who wanted to register their opinion, the Sierra Club created an easy way to do so with a few clicks, provided users consent to "receive periodic communication from the Sierra Club." While such campaigns may engage many people, they are unlikely to affect policy or to inspire countermobilization. I expect such campaigns to occur on rules that have high partisan salience (e.g. rules following major legislation passed on a narrow vote), propose large shifts on policy issues dear to well-funded public interest groups, and occur after presidential transitions when executive-branch agendas shift more quickly than public opinion.

**Hypothesis 1c:** *When a lobbying coalition with more intense public support successfully mobilizes for reasons other than influencing policy, opposing coalitions with less public support are not more likely to counter-mobilize.*

Going public and going down fighting may be difficult to in the observed public response.

Figure 4: Mass mobilization campaign by the Sierra Club collects contact information



Indeed, members of the public may poorly understand the chances of success. However, groups do likely know their chances of success and thus will invest in much less sophisticated insider lobbying under the going down fighting strategy.

While coalitions may form around various material and ideological conflicts, those most likely to be advantaged by going public or going down fighting are public interest groups—organizations primarily serving an idea of the public good rather than the material interests of their members.[11] Thus, I theorize that mass mobilization is most likely to occur in conflicts of public versus private interests or public versus public interests (i.e. between coalitions led by groups with distinct ideas of the public good), provided they have sufficient resources to run a campaign.[12]

**Hypothesis 1d:** *Public interest group coalitions mobilize more often than business-driven coalitions.*

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[11] One exception may be the few types of membership organizations that are both broad and focused on material outcomes such as labor unions.

[12] If true, one implication is that mass mobilization will systematically run counter to concentrated business interests where they conflict with the values of organized, privileged groups.

Table 1: Observable differences in engagement across types of mass-mobilization campaigns

|  | Inside lobbying | Number of comments | Effort | Contagion |
|---|---|---|---|---|
| Going public | High | High | High | High |
| Disrupting | High | Low | Low | Low |
| Going down fighting | Low | High | High | High |

### 2.1.3 Patterns of mass engagement

I classify supporters into three types based on how they were mobilized. Comments that are exact copies of a form letter are akin to petition signatures from supporters who were engaged by a campaign to comment with minimal effort. Commenters that also take time to add their own text indicate more intense preferences. Finally, commenters who express solidarity in similar but distinct phrases indicate they were engaged indirectly, perhaps by a news story or a social media post about the campaign, as campaign messages spread beyond those originally targeted. Because the success of a mobilization effort is moderated by public support, broader public interest group coalitions ought to mobilize more people, more effort per person, and more people indirectly for the same amount of mobilization effort (e.g. spending or solicitations).

**Hypothesis 1e:** *Public interest group coalitions mobilize more successfully than business-driven coalitions. Indicators of success include (1) the number of comments supporting a coalition (2) the effort per comment (3) the number of comments mobilized indirectly.*

The size of each group thus offers political information to policymakers, including coalition resources, the intensity of sentiment, and potential for conflict to spread. The first two types signal two kinds of intensity or resolve. First, they show the mobilizers' willingness to commit resources to the issue. Second, costly actions show the intensity of opinions among the mobilized segment of the public (Dunleavy 1991). The number of people engaged by a campaign is not strictly proportional to an organizations investment. The less each person care, the more it costs to mobilize them. The third type indicates potential contagion. Indications that messages spread beyond those originally targeted may be especially powerful (Kollman 1998).

Information about organizational resolve, the intensity of preference, and contagiousness are thus produced, but, as I discuss in section 2.3, such political information will only influence

decisions if these signals are processed in a way that captures this information and relays it to decisionmakers. These organizational processes may vary significantly across agencies.

### 2.1.4  Incorporating political information into models of lobbying in rulemaking

When lobbying during rulemaking, groups often make suspect claims to represent broad segments of the public (Seifter 2016). If agency staff do not trust an organizations' representational claims, engaging actual people may be one of the few credible signals of a broad base of support. Appeals to government are almost always couched in the language of public interest, even when true motivations obviously private (Schattschneider 1975). Theorists may debate whether effectively signing a petition of support without having a role in crafting the appeal is a meaningful voice and whether petitions effectively channel public interests, but, at a minimum, engaging a large number of supporters helps distinguish broader interests from truly narrower ones. It suggests the organization is not "memberless" (Skocpol 2003) in the sense that they are able to demonstrate some verifiable public support.[13]

Mass mobilization is a strategy. When successful, mass engagement is the result. An organization's ability to expand the scope of conflict by mobilizing members of the public may occasionally be a valuable political resource. In contrast to scholars who focus on the deliberative potential of public comment processes, I focus on public engagement as a tactic aimed at gaining power, either by leveraging powerful ideas or engaging actors with the institutional power to shape decisions. Scholars who do understand mobilization as a tactic (Furlong 1997; Kerwin and Furlong 2011) have thus far focused organizations mobilizing their membership. I include a campaign's broader audience and its potential to grow, more akin to the concept of an attentive public (Key 1961) or issue public (Converse 1964). If organizations claim to represent people beyond their official members, reforms requiring groups to disclose information about their funding and membership (Seifter 2016) only go part way to assess groups' claims to represent these broader segments of the public. Indeed, if advocacy group decisions are largely made by D.C. professionals, these advocates themselves may be unsure how broadly their claims resonate until potentially-attentive publics are actually engaged.

Here I build on three insights. First, Kerwin and Furlong (2011) and Furlong (1997) identify mobilization as a tactic. In their survey, organizations report that forming coalitions and mobilizing large numbers of people are among the most effective lobbying tactics. Second, Nelson

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[13] Public support can be faked or inflated using "astroturf" tactics but as I argue below, such campaigns ought to have observably different patterns of engagement.

and Yackee (2012) identify political information a potentially influential result of lobbying by different business coalitions. While they focus on mobilizing experts, Nelson and Yackee (2012) describe a dynamic that can be extended to mass commenting:

> "strategic recruitment, we theorize, mobilizes new actors to participate in the policy-making process, bringing with them novel technical and political information. In other words, when an expanded strategy is employed, leaders activate individuals and organizations to participate in the policymaking process who, without the coordinating efforts of the leaders, would otherwise not lobby. This activation is important because it implies that coalition lobbying can generate new information and new actors—beyond simply the 'usual suspects'—relevant to policy decision makers. Thus, we theorize consensus, coalition size, and composition matter to policy change."

I argue that, with respect to political information, this logic extends to non-experts. The number of and distribution of ordinary supporters also matters because it suggests a public consensus. Instead of bolstering scientific claims, a perceived public consensus bolsters political claims. Third, Furlong (1998), Yackee (2006), and others distinguish direct and indirect forms interest group influence in rulemaking. I argue that mass mobilization is a tactic aimed at producing political information.

Rauch (2016) suggests that agencies reform the public comment process to include opinion polls. I build from a similar intuition that mass comment campaigns currently function like a poll or, more accurately, a petition, capturing the intensity of preferences among a segment of the public—i.e. how many people are willing to take the time to engage.[14] Self-selection may not be ideal for representation, but opt-in participation—whether voting, attending a hearing, or writing a comment—still provides political information. Mobilizing citizens and generating new political information are key functions of interest groups in a democracy (Mansbridge 1992; Mahoney 2007). The information generated by mass mobilization campaigns is explicitly political and more complex than an opinion poll. Activists aim to convince people which issues are important and how to think about them—mapping new issues and debates to familiar ones, thereby shifting the political landscape.

Importantly, rule-specific campaigns inform agencies about the distribution and intensity of opinions that are often too nuanced to estimate a priori. Many rules may lack analogous public

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[14] For example, a campaign by the World Wildlife Federation provided language explicitly claiming to have public opinion on their side, their model comment reading "Along with 80% of the American people, I strongly support ending commercial trade in elephant ivory in the US." This suggests that mass comment campaigns aim to signal information about public opinion.

opinion polling questions, making mass commenting a unique source of political information. Indeed, as is true about public opinion on many specific policy issues (Hutchings 2003), most members of the public and their elected representatives may only learn about the issue as a result of a mobilization campaign. I thus consider public demands to be a latent factor in my model of policymaking. Public demands shape the decisions of groups who lobby in rulemaking. If they believe the attentive public is on their side, groups may attempt to reveal this political information to policymakers by launching a mass mobilization campaign. The public response to the campaign depends on the extent that the attentive public is passionate about the issue.Figure 5 amends the classic model of interest group lobbying to incorporate the above intuitions.

Figure 5: Incorporating Mass Engagement and Political Information into Models of Lobbying
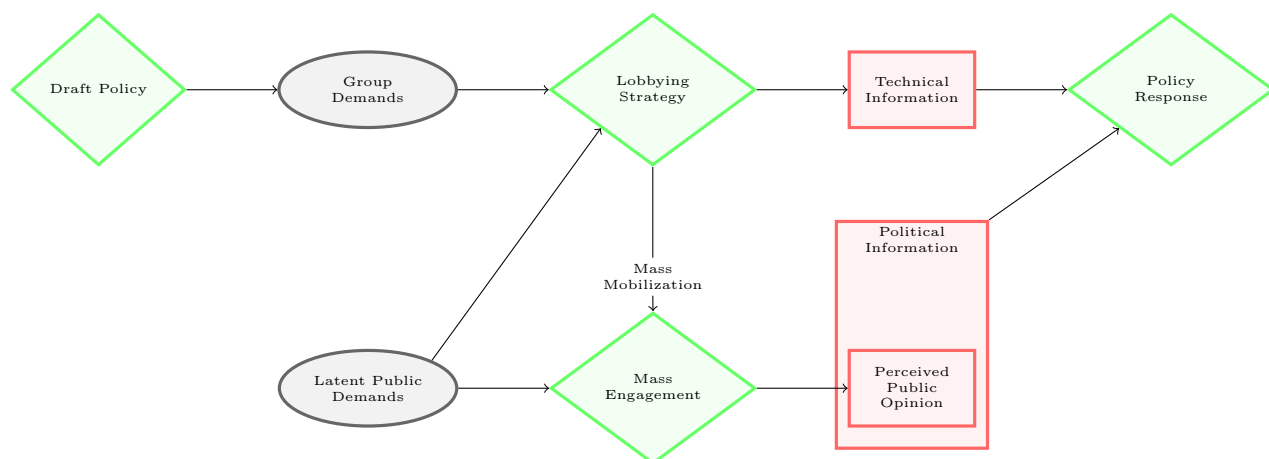


The causal process visualized in figure 5 only operates under certain conditions. As suggested above, one of those conditions is that mobilization was aimed at influencing policy. As I will describe in section 2.3, another condition is that agencies have the capacity to process political information. But first, section 2.2 focuses on another key source of political information: political oversight behavior.

## 2.2   Step 2: Why mass engagement may affect political oversight

When George W. Bush replaced Bill Clinton as president, career bureaucrats at the Federal Trade Commission knew that this meant a change in policy priorities. Many rulemaking projects initiated under the Clinton administration were likely to be withdrawn or put on hold. They also knew that the new administration wanted to be perceived as advancing a new policy agenda, not merely undoing Clinton-era regulations. Entrepreneurs within the agency saw a political window of opportunity to initiate a new regulatory agenda aimed at curbing a growing volume

of telemarketing calls. This initiative seemed likely to be popular with voters but, even with a supportive president, would be difficult to advance over the objections of the telemarketing industry whose campaign donations had earned them many powerful allies in Congress. Agency officials report being pessimistic about the FTC's telemarketing effort succeeding over opposition from Congress.

When the draft "Telemarketing Sales Rule" (also known as the "Do Not Call" rule) was published, however, public support and engagement were overwhelming. The rule received thousands of supportive comments from frustrated members of the public who were encouraged to comment by advocacy groups like the Consumer Federation of America. Agency officials report that the volume of public response not only encouraged the agency and the administration but, more importantly, "scared off" Members of Congress who the industry was relying on to kill or reverse the rule. Once it became clear that the public was paying attention and sufficiently mobilized to act on the issue, elected officials became much less willing to take unpopular positions supporting industry donors. Instead, Congress ended up codifying the agency's authority to implement the Do Not Call regulations with legislation the following year.

The story of the Do Not Call rule suggests that public engagement in rulemaking may occasionally be influential because it affects the behavior of elected officials who have the power to provide key support or opposition to a proposed rule.

**Political oversight.**   Political oversight of bureaucracies has long concerned both practitioners and theorists (?Huber and Shipan 2002; Mccubbins and Schwartz 1984; Wilson 1989; Potter 2016; Lowande 2018). Political scientists often model the relationship between elected officials and bureaucrats as a principal-agent problem. For example, an agency may have a preferred policy but, upon observing the preferences of principals, may change the rule or delay its publication to avoid being reversed (Potter 2016). While it is widely accepted that agency officials must take the positions of their principals into account, the mechanisms by which this occurs and the empirical conditions for political control are debated.

Because I focus on influence in the period between publication of draft and final rules, I focus on information about principals' preferences revealed to the agency in this period. Oversight during rulemaking is a form of ex-post control (Epstein and O'Halloran 1994). Figure 6 shows a version of the classic model of principal influence in rulemaking. Upon learning of content of a draft rule, an official with power over the agency may choose to signal their demands to the agency. There is an ongoing debate among scholars over how political oversight operates–i.e. how

Figure 6: The Classic Model of Principal-Agent Oversight in Bureaucratic Policymaking



the observable behaviors of principals inform agency decisions.

McCubbins, Noll and Weingast (1987) suggest two oversight mechanisms. Principals may proactively attend to agency activities, like a "police patrol" or they may rely on bureaucrats' fear of sanction when attentive interest groups alert principals about agency activities, more like a "fire alarm." Administrative procedures like notice and Comment remaking thus offer opportunities for direct oversight and to be alerted to oversight opportunities.

### 2.2.1   Incorporating political information into models of political oversight.

In addition to interest groups directly alerting elected officials to oversight opportunities as in the "fire alarm" model, the political information signaled by mass engagement may serve as a serve as "warning sign,"–altering elected officials to political risks *or* to, conversely, to encourage the agency to hold course (what might better be described as a "beacon" attracting positive attention and credit claiming opportunities. In the case of the FTC's "Do Not Call" rule and subsequent legislation, mass engagement functioned more as a "warning" and a "beacon," effectively enabling and empowering rather than restraining the agency as classical "fire alarm" concept suggests.

Mass engagement in bureaucratic policymaking may affect the behavior of an agency's principals because the shadow of public sanction hangs over elected officials (Arnold 1979; Mayhew 2000). When the public is more attentive, it is more important for officials to take popular positions and avoid unpopular ones. Thus, when a coalition goes public, especially if it generates a perceived consensus in expressed public sentiments, elected officials ought to be more likely to intervene on their behalf and less likely to intervene against them.

**Hypothesis 2:** *Elected officials' advocacy is moderated by mass engagement. Elected officials are more likely to engage in rulemaking in support of positions supported by the majority of comments and less likely to engage in opposition to the majority of comments.*

This suggests an addendum to Hall and Miler's (2008) finding that legislators are more likely to engage in rulemaking when they have been lobbied by a like-minded interest group. When interest groups lobby elected officials to engage in rulemaking, they may be more likely to engage

Figure 7: Incorporating Mass Engagement and Political Information into Models of Political Oversight
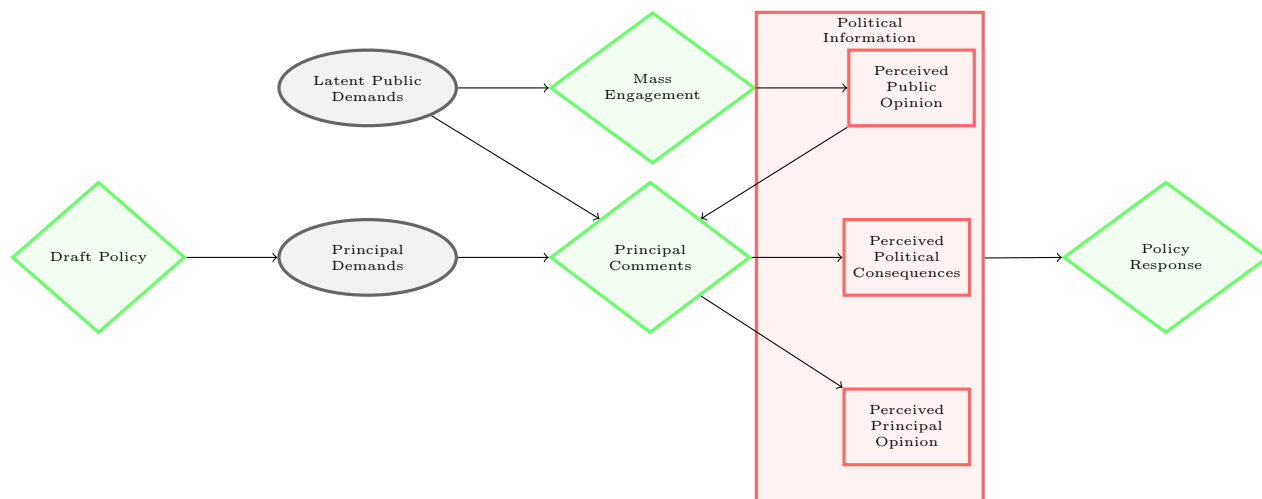


when aligned with the majority of commenters than when opposed to them (Hypothesis 2. If elected officials learn from political information, they will be even more likely to engage when lobbied by a coalition that includes public interest groups running a mass-comment campaign, and less likely when lobbied by a coalition dominated by private interests opposed by a large mass comment campaign.[15]

Figure 7 builds on the classic model of political oversight in two ways. First, it suggests that the public and private comments by elected officials are a particularly relevant oversight behavior and a mechanism by which bureaucrats learn and update beliefs about their principals demands. Second, it suggests that such oversight behaviors may be affected by mass engagement because of the impressions of public opinion (i.e. the political information) it creates.

## 2.3   Step 3: Why mass engagement may affect rulemaking and rules

In 2011 the Environmental protection agency proposed two regulations to limit mercury emissions from coal and oil-fired power plants. Among other issues, the Environmental Protection Agency (EPA) solicited "comments on whether there would be a basis for considering area sources to be significantly different from major sources," "on the adequacy of the restrictions associated with bypass conditions regarding maintaining LEE status" and "on the proposed revisions concerning

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[15]Of course, if Members of Congress receive signals about the distribution of comments from their districts, the distribution of opinions in their district constituency may be more important. Figure 4, shows that the Sierra Club requires zip code information from commenters, so mass-mobilizers may often send such signals to elected officials.

[equations' 1a and 1b] usefulness in calculating the maximum potential emissions rate from an emissions averaging group" (EPA 2011). LEE status is not defined in the notice soliciting comments, and equations 1a and 1b are surely inaccessible to most citizens. Yet these two proposed rules received 942,483 comments.

One comment, from the United States Council of Catholic Bishops, read: "While we are not experts on air pollution, our general support for a national standard to reduce hazardous air pollution from power plants is guided by Catholic teaching, which calls us to care for Gods creation and protect the common good and the life and dignity of human persons, especially the poor and vulnerable." Bishops are not known to closely follow power plant regulations. Their moral authority was mobilized by activists who wanted stricter regulation of mercury and wanted to demonstrate public support of this position.

In the official, legally-required response to comments, the EPA did not discuss public opinion, obligations to care for the environment, dignity, or the poor. Instead, the EPA asserted that mercury levels are a matter of science, not a matter of justice. But the EPA did implicitly assert a definition of the public good when it used studies of mercury's aggregate public health effects on the U.S. population to set emissions standard.[16] Then, as required by the Supreme Court, it justified the same standards with cost-benefit analysis in a revised proposed rule, concluding that for every dollar spent to comply with the regulation, the U.S. public receives up to nine dollars in health benefits (EPA 2007). If this is how decisions are made, why would citizen opinions matter?

### 2.3.1 Political information and influence in rulemaking

In this section, I integrate the above arguments about interest group lobbying and political oversight to offer a broader model of influence in rulemaking that highlights the political information available to policymakers. As suggested above, such information occasionally arises from contentious debate and civic mobilization and may influence elected officials' oversight behaviors.

If we appreciate agency policymaking as a site of contentious politics, mechanisms emerge by which mass mobilization may affect both the strategic environment and ideological perspectives

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[16] As Wagner (1995) notes, "agencies exaggerate the contributions made by science...in order to avoid accountability for the underlying policy decisions. Wagner goes on to find that "While the APA mandates a process for public involvement, it provides almost no protections to ensure that agencies will explain the substantive bases for highly complex or technical rulemakings in a way that the lay public can readily understand and challenge" (1656) and that "Mischaracterization of the entire standard-setting endeavor as resolvable by science results in significant obstacles to democratic participation" (1674). Similarly, Harvey Brooks (1984) notes that "The modern nation risks being no longer recognizable as a democracy, either representative or plebiscitary, if more and more policy areas are excluded from public participation because of the technical complexity."

of those who write agency rules. These mechanisms remain under-theorized and untested. I aim to begin to fill this gap by outlining four mechanisms by which political information may influence bureaucratic policymaking. Bureaucrats have both strategic and normative reasons for updating policy decisions in light of new political information. The effects of political information on policy thus depend on the strategic context that may or may offer opportunities for influence and cognitive and institutional processes that may or may not incorporate political information.

**Political influence in rulemaking**   In contrast to the science-based objectivity suggested by the above quote from the EPA, political scientists, building on law and economics scholarship, offer a different theory of bureaucratic decisionmaking rooted in the policy preferences and strategic behavior of agency leaders and their political principals: Congress, the president, and the courts. They find that political principals do constrain agency action but also leave room for agencies to move policy toward their own ideal point.[17] Technical information may or may not inform agency decisions, but preferences and the power to realize them in a strategic environment are, these scholars say, are the proximate cause of policy. These scholars would see the Mercury Rules as the result of EPA officials writing a policy as close as possible to their ideal policy given their strategic constraints.

But the stratigic model does not explain why acrivists thought public comments would matter. If the strategic model is sufficient, why did organization write letters to the EPA? The EPA administrator has their preferences and the public has no direct power over their decisions. Why not write to the president or members of Congress who influence EPA's strategic calculations and are more directly accountable to public opinion? In section 2.1 I offered three reasons that organizations may launch mass mobilization campaigns. In section 2.2, I suggested that public comments may have a similar effect on political principals as to mass mail campaigns directly targeting them. In this section, I merge these insights into a broader theory of how mass engagement may affect policy.

Political scientists, along with scholars of public administration, organizational behavior, and sociology who study interest groups expand on the simple principal-agent model described above that, while less parsimonious, squarely address how the process of soliciting and responding to public comments may influence agency policy (see Yackee (2018) for a review). These scholars find that agency staff develop relationships with those who regularly participate in policy processes: most often businesses but also professional associations and activist organizations.

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[17]Though political scientists make diverse assumptions about what this ideal is and how to measure it.

Relationships draw on and reproduce organizational identities and reputations (Carpenter 2001, 2014; Carpenter and Krause 2012). This scholarship has revealed a good deal about how organized groups lobby agencies and why they succeed, but it has yet to address why these groups sometimes mobilize thousands of citizens to write letters or protest agency decisions. Like most forms of political participation, mass public comments on draft agency rules provide no new technical information. They lack the authority of elected officials' opinions. And the number on each side has no legal import for an agency's response ?Kerwin and Furlong (2011). Policymakers may very well pay no attention to them. The theoretical foundations for why mass mobilization may matter is underdeveloped and we lack empirical research on how it may affect agency policymaking.

I address this theoretical and empirical gap in our knowledge on the role of mass mobilization in bureaucratic policymaking. I expand and integrate the above theories to develop testable hypotheses to explore whether mass mobilization matters and, if so, why.

I argue that if mass mobilization indirectly affects the strategic environment it does so by signaling grass-roots political power to elected officials and if mass mobilization directly affects agency policymaking it does so by evoking norms rooted in organizational identities and reputations. Like the vast majority of letter-writers, Catholic Bishops contribute little to the technical aspects of epidemiology, mercury regulations, or cost-benefit analysis. If they influence agency policymaking, it is by signaling a threat of political backlash or by persuading bureaucrats directly that moving policy in a certain direction is the appropriate thing for the agency to do. The next two subsections address these indirect and direct mechanisms in more depth. A third discusses why we may still observe mobilization in the absence of influence.

**Opportunity.**    First, the influence of political information depends on the extent to which the strategic environment allows change. A core concept in social movement scholarship is the "political opportunity" or "opportunity structure" (Mcadam 2017) such as division among elites (Tarrow 1994). In my case, a division among elites could be divergent principals among an agency's political principals or powerful business interest groups. With respect to division among business interests, this aligns with findings from studies of rulemaking that find that consensus among businesses increases their influence in rulemaking (Yackee and Yackee 2006; Nelson and Yackee 2012). However, the role of divided government is less clear. Yackee and Yackee (2009) find that divided government decreases the frequency of rulemaking. However, this does not mean that it reduces the potential for groups to influence those rules that are produced.

Policy process scholars use a similar concept of "window" for policy change where advocates have an opportunity to align politics with certain identified problems and solutions (Kingdon and Thurber 1984). All rulemaking processes create opportunities, however small, to shape the new status quo, loosely bounded by the problems the process was initiated to solve, a set of policy solutions considered legitimate, and a constellation of political forces.

**Information processing.** Second, influence depends on how political information is processed, both directly within agencies and indirectly through other actors (e.g. Members of Congress) whose appraisals matter to bureaucrats.

A growing literature in political science draws on scholarship in law and public administration as well as studies of agenda setting and lobbying in legislative policymaking to better understand agencies as policymaking bodies. Public administration and legal scholars have been more attentive to the prominent role of interest groups. Kerwin and Furlong (2011) notes that "Interest groups could find few modes of government decision making better suited to their particular strengths than rulemaking." This research finds business groups to be the most successful class of commenters in rulemaking (Yackee and Yackee 2006) especially when lobbying together, often, or unopposed (Nelson and Yackee 2012) and when lobbying across multiple venues (Yackee 2015). Importantly, this literature notes that the currency of lobbying is information (Hall and Deardorff 2006; Carpenter, Esterling and Lazer 1998; Yackee 2006; **?**), which includes both science and policy ideas (Jones and Baumgartner 2005). Kirilenko, Mankad and Michailidis (2014) and Yackee and Yackee (2006) both find evidence that comments from sophisticated interest groups like businesses seem to influence rules. Yackee and Yackee (2006) theorize that the for this mechanisms include bringing in new voices and sending unified messages at higher amplitudes, creating perceptions of political consensus.

### 2.3.2 Mechanisms by which groups may influence bureaucratic policymaking

Why might mass mobilization matter? The literature on bureaucracy offers two types of explanations rooted in either strategic behavior or organizational processes and norms. Political scientists often focus on strategic context. Public administration and management scholars focus on organizational logics and identities.

While scholars often focus on the top right cell of Table 2, the influence of political information is to be found in the other three cells. Political scientists have focused on strategic factors—either on how lobbying provides technical information that directly influences agency decisions or on

Table 2: Mechanisms by which new information may influence bureaucratic policymakers

|          | Shifting Strategic Incentives | Highlighting Norms in Institutional and Cognitive Processes |
|----------|-------------------------------|------------------------------------------------------------|
| Direct   | Technical information (H3a) (e.g. inputs to benefit-cost analysis) | Attentive "public" opinion (H3b) (public service/responsiveness/direct democracy) |
| Indirect | Likely retribution and reward (H3c) (e.g. future budgets, careers, support) | Elected official opinion (H3d) (accountability/representative democracy) |

how oversight indirectly constrains them. Mass engagement is only likely to affect the later.

New technical information that is relevant to understanding the effects of proposed policy (e.g. inputs to benefit-cost analysis such as the cost or benefits for regulated businesses) may directly affect technocratic decisions. New political information that is relevant to the likelihood of political support, sanction, or reversal may indirectly affect bureaucrats' strategic calculations.

Political information may also affect bureaucrats' normative evaluations. These effects may be direct (e.g. the weight that norms of direct democracy give to limited public input) or indirect (the weight that norms of accountability give to elected officials' input). The strength of norms of direct and indirect accountability to public demands may vary across agencies with levels of political insulation and responsiveness.

**Hypothesis 3a:** *Weak: Agencies respond to sophisticated comments. Strong: Agencies only respond to sophisticated comments (i.e. political information has no effect).*

**Hypothesis 3b:** *Weak: Agency responses to sophisticated comments are moderated by perceived public opinion as expressed in mass comments. Strong: Agencies responses to sophisticated comments are moderated only by perceived public opinion as expressed in mass comments (i.e. not by elected officials).*

**Hypothesis 3c:** *Weak: Agency responses to sophisticated comments are moderated by perceived elected official opinion. Strong: Agencies responses to sophisticated comments are moderated only by perceived elected official opinion (i.e. not by mass comments directly or by especially influential elected officials).*

**Hypothesis 3d:** *Weak: Agency responses to sophisticated comments are moderated by strategically important elected officials' opinions. Strong: Agencies responses to sophisticated comments are moderated only by strategically important elected officials' opinions.*

Figure 8: The Role of Mass Commenting and Political Information in Bureaucratic Policymaking
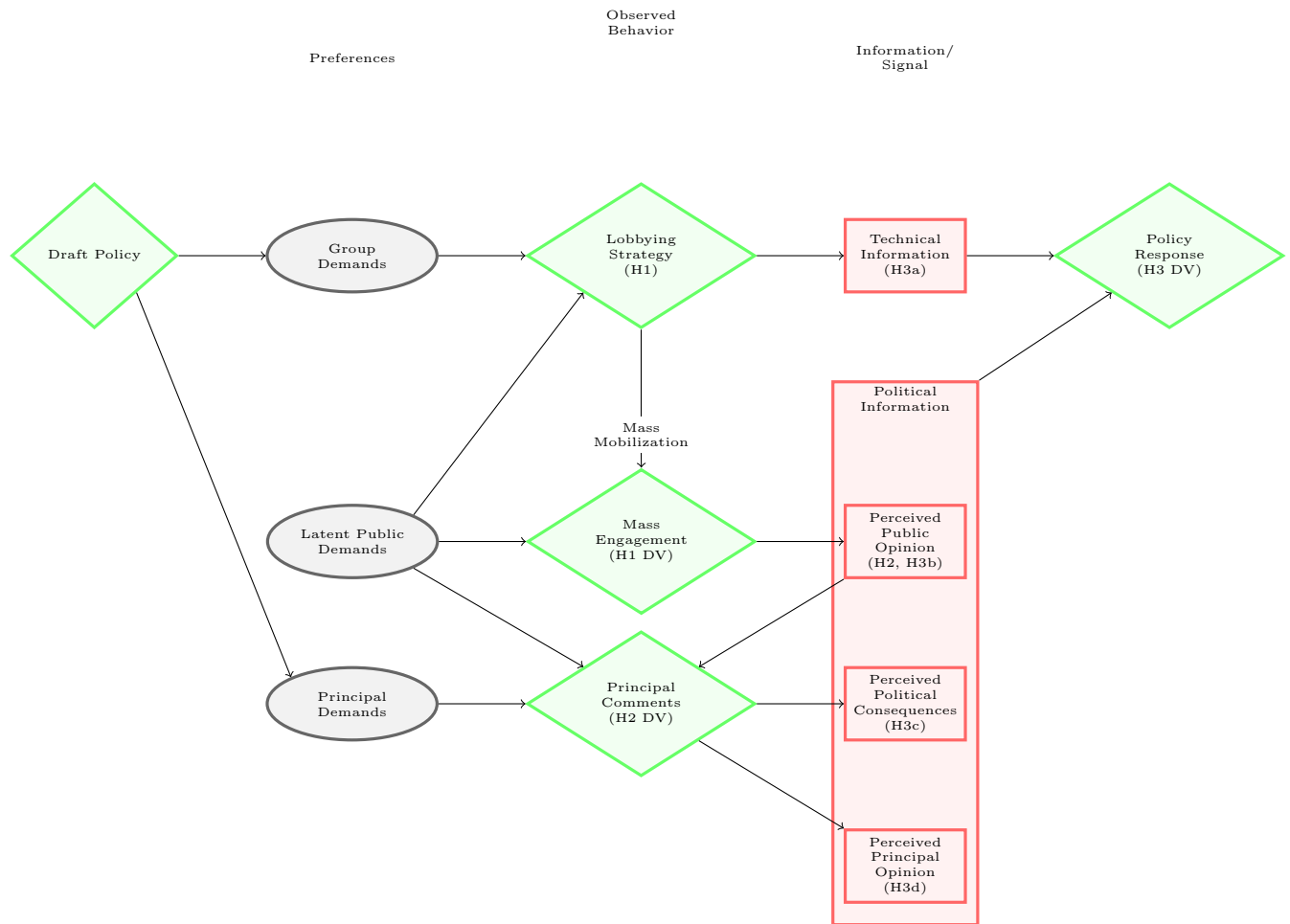


**Direct effects on strategic calculations:**  New information may affect agency strategy directly or indirectly. New scientific or legal information spurs revision of calculations about cost and benefits or the likelihood of being reversed in court. New political information spurs bureaucrats to update their beliefs about levels of support among certain populations or their elected representatives and thus the likely political consequences of a decision.

Indirectly, it may alert elected officials to political risks and opportunities, thus reshaping an agency's strategic environment.

The White House has several tools to influence agency decisions (Yackee and Yackee 2009; Simon 1954). These include executive orders (Mayer 1999), appointments (Doherty, Lewis and Limbocker 2014; Lewis 2008; Wood, Moran and Weingast 1988), budgets (Whittington and Carpenter 2003), and review of proposed policies (Haeder and Yackee 2015; Acs and Cameron 2013).

Congress also has several tools to influence agency decisions. These include the power of the purse (Fenno 1986; Bolton and Thrower 2015), oversight, and new legislation. Some research suggests that this constraint is larger under divided government (Yackee and Yackee 2009) and that under divide government Congress tends to divide power among multiple agencies (Farhang and Yaver 2016). The anticipation of judicial review makes courts relevant to rulemaking. Some rules are also made under court-imposed settlement or with judicial deadlines. Judicial opinions may also call on Congress to act (Yaver 2017). Despite these mechanisms and because of conflicts among them, agency staff maintain significant power over agency decisions. For example, Congress is less assured of compliance when power is divided (Yaver 2016).

Legal scholars' case studies of specific rulemaking process offer an additional relevant body of research. Coglianese (1997) finds that litigation is a common extension of rulemaking. Indeed, unlike legislative lawmaking, rulemaking takes place in the clear and present shadow of judicial review (Rossi 2001). Stakeholders can challenge a rule in court on a variety of procedural grounds and on statutory interpretation. This scholarship suggests those who succeed in rulemaking are those with the resources and experience to succeed in court. Costly mass comment campaigns could be signaling the ability and willingness to spend resources to challenge the rule in court.

Mass mobilization may signal political risks or benefits of engaging in agency policymaking to members of Congress and the White House. It also may signal to the agency that activists have the capacity to sustain pressure through the policy process (Coglianese 2001), including challenging the policy in court, a constant threat agency policies. Thus, mass mobilization may act as a signal of political power that reshape rule-writers' beliefs about their strategic context.

**Indirect effects on the strategic calculations**    In the U.S. context, agencies are accountable to the president, Congress, and courts. Many rules receive little attention from these other institutions, but all three significant powers to reward, sanction, or reverse agency actions (Yaver 2016). If mass engagement affects the behavior of these actors, it alters the strategic context in which bureaucrats make decisions. Mass mobilization may also signal a coalition's *potential* to influence the responses to agency action from the White House, Congress, or courts.

For example, the number, geographic distribution, size, and proportion of businesses who lobby against a rule, may provide information about how much money and which of their political principals may be invested in attacking a rule. Similarly, the number of people who engage in a rulemaking and the intensity of engagement may provide information about how much support or scrutiny an agency is likely to receive from certain political principals.

As activist campaigns may be less predictable than business lobbying, civic mobilization may provide even more information about constellations of support or opposition and the intensity of these policy demanders. If the information leads bureaucrats to update their understanding of the constellations of interests, their intensity, and the power and resources of each coalition, it may affect their strategic response.

Bureaucrats care about the consequences of their actions, both for themselves for their agencys mission. Their success and power depend on the support of a political coalition that includes elected officials (Carpenter 2001). West (2004) theorizes that the primary mechanism by which mass-commenting matters is to alert political principals. Members of Congress, especially, may usually be unaware of rulemaking (Nou and Stiglitz 2016). Conversely, campaigns may "scare off" elected officials who otherwise would have weighed in, threatening consequences, such as legislation that reverses the rule (personal communication with former agency director). Reshaping strategic incentives may shift how rulewriters weigh commenter demands.

**Direct effects on information processing and normative evaluations:** In addition to strategic calculations, mass engagement may shift how information is processed and evaluated, both institutionally and cognitively. By focus policymakers attention on certain aspects of policy decisions mass engagement may affect who is involved these decisions and how they are framed.

Institutionally, higher comment volume may engage a larger and more politically-oriented set of staff and consultants. Cognitively, expanding the scope of conflict highlights the political aspects of a decision, perhaps mobilizing cognition focused more on norms of public service or partisan ideology than on strategic or technical rationality. In both cases, campaigns re-frame decisions as political and provide information that is especially relevant if processed through such a frame.

The source, number, and content of comments all provide political information. Each side may offer frames for interpreting these facts and others. If framed as the opinion of the public or as expressing valid public interests, such a frame may shape how officials think about the appropriate course of action for a public servant or a partisan concerned with the popularity of agency decisions.

Organizational theory suggests additional mechanisms by which mass mobilization may influence bureaucratic decisions more directly. Here the causal process involves mobilizing norms and ideas right and wrong rooted in individual and institutional identity. Because concepts of mission, reputation, and the validity of claims are intertwined, these mechanisms are difficult

to precisely define. Nevertheless, scholars have identified several types of direct influence. One important factor in decision making is personal and institutional reputation (Carpenter 2001). This can take several forms. For example, individuals trained as scientists and agencies that cultivate reputations for producing valid science may be persuaded by rigorous scientific claims. Similarly, individuals who identify strongly as public servants and agencies with reputations for public responsiveness may be persuaded by claims about public or "stakeholder" opinion. In general, claims that resonate with the problems an agency has been tasked with solving and the means it has to solve those problems are likely to be well received.

Even, perhaps especially, when positions expressed through contentious politics are not majoritarian, these tactics may communicate political information that is not represented through electoral politics (Gillion 2012, 2013). Campaigns may also frame minority groups as deserving of special attention and protection.

To the extent that elected officials' demands guide agency decisionmaking—i.e. to the extent that agency decisions are shaped by norms of accountability in representative democracy—campaigns may be influential by inspiring elected officials to produce new political information. When elected officials take a position publicly or in a private letter to an agency, such political information may have normative force beyond simply simple strategic calculations.

**Capacity to process information.**    The impact of any kind information on policy decisions depends on the capacity to process this type of information. It is possible that many agencies lack the capacity to process political information embedded in mass comments. Some may simply discard this information (Mendelson 2011). The expected influence of mass engagement thus depends on how information is processed, which I expect to vary significantly across agencies.

### 2.3.3   Incorporating political information into formal models

Formally, political information requires several crucial amendments to existing information-based models of rulemaking. In the most sophisticated model of notice-and-comment rulemaking to date, Libgober (2018) posits a utility function for agency $G$ as $u_G(x_F) = \alpha_0 x_f^2 + \sum_{i=1}^{N} \alpha_i u_i(x_f)$ where $x_f$ is the spatial location of the final policy, $u_i$ is the preference of a member of the public or "potential commenter" $i$, and $\alpha$ is a vector of "allocational bias"—i.e. how much the agency cares about its own preferences $\alpha_0$ relative to accommodating the preferences of others $\alpha_{i=1:N}$. Bureaucrats balance their own idea of their mission against their desire to be responsive. In Libgober's model, $\alpha$ is a fixed "taste" for responsiveness to each member of society, so agency

decisions simply depend on their answer to the question "what do people want?" Including political information requires two additional parameters related to a second question "why would the agency care?"

First, going public (like other lobbying strategies) may shift the strategic environment, leading an agency to shift its allocation in favor of some groups and away from others. Let this strategic shift be a vector $\alpha_s$. Second, campaigns may directly persuade agencies to adjust their allocational bias, for example by supporting claims about the number of people the group represents or the intensity or legitimacy of their policy demands. Let this direct shift be $\alpha_d$ and immutable taste now be $\alpha_t$. Having decomposed an agency's allocative bias into three parts (its fixed tastes, shifting strategic environment, and potential to be convinced), the agency's utility function is now $u_G(x_F) = (\alpha_{t0} + \alpha_{s0} + \alpha_{d0})x_f^2 + \sum_{i=1}^{N}(\alpha_{ti} + \alpha_{si} + \alpha_{di})u_i(x_f)$. If, after the comment period, an agency's strategic environment is unchanged and it remains unpersuaded about which segments of society deserve favor, $\alpha_s$ and $\alpha_d$ are 0, and the model collapses to the original information game based on fixed taste. This less plausible when groups go public and expand the scope of conflict.

Incorperating political information allows us to begin formalizing intuitions about mechanisms of influence. For example, Libgober (2018) asks "What proportion of commenting activity can be characterized as informing regulators about public preferences versus attempting to attract attention of other political principals?" (p. 29). Adding political information to the model allows us to formalize this question: Under what conditions does the decision to comment depend on an organization's beliefs about $\alpha_t$ versus beliefs about $\alpha_s$? Empirically, we may often be able to infer that the difference in commenting can be attributed to group $i$'s beliefs about $\alpha_{si}$ if the behavior of political principals varies but other observed parameter values are similar across rules at a given agency.

Rational-choice explanations of why organizations comment on proposed rules build on an intuition that potential commenters will comment only when the benefits exceed the costs of doing so. This intuition ought to apply to other lobbying strategies such as mass mobilization as well. Adding an additional lobbying strategy into the model described above is straightforward. In Libgober's model, a potential commenter has negative quadratic preferences centered on their ideal policy $p_i$ and $u_i = -(x_f - p_i)^2$ where $x_f$ is the final policy chosen by the agency. An organization will comment if the cost of doing so is less than the difference between their utility when the agency selects a policy having been informed about the organization's ideal point $p_i$ versus when the agency selects a policy having made a guess about the organization's ideal point,

$z_i$. If $c_i$ is organization $i$'s cost of commenting, then $i$ will comment if it expects to be better off providing information than abstaining $E[u_i|p_i] > E[u_i|z_i] + c_i$. Similarly, an organization will go public when it expects that the cost of running a mass mobilization campaign to be less than the difference in utility when the agency selects a policy having been informed about the intensity of broader public preferences $p_{public}$ versus when the agency selects a policy having made a guess about the intensity of the attentive public's preferences, $z_{public}$. If $c_{campaign,i}$ is organization $i$'s cost of running a mass mobilization campaign, then $i$ will launch a campaign if $E[u_i|p_{public}] > E[u_i|z_{public}] + c_{campaign,i}$. This suggests that mass mobilization with the aim of influencing policy, i.e. going public, should be more common when agencies are either poorly informed or distant from public opinion and potentially influenced by the types of political information created by mass engagement.

Additionally, an organization may comment or run a mass mobilization campaign if it benefits in ways that are independent of policy outcomes. Strategies such as "going down fighting" can be incorporated by adding exogenous benefit parameters to the utility function of the potential commenter/mobilizer. Let $v_i$ be the benefit of commenting independent of its effect on the policy outcome, such as pleasing members or to reserving the right to sue. Let $w_i$ be the benefit of running a mass mobilization campaign independent of its effect on the outcome of the policy at hand, such as fulfilling expectations of existing members or recruiting new members. An organizations utility function would then be $u_i = -(x - p_i)^2 + v_i + w_i$.

Adding these parameters also resolves a puzzling result of Libgober's model. Empirically, rules that receive comments do not always change. This result is impossible in a model where bureaucrats only have known fixed tastes and potential commenters only seek changes in policy. For policy seeking organizations to lobby but fail to influence policy requires that they may either be wrong about an agency's allocative bias or their ability to shift it. Incorporating political information allows change and uncertainty in an agency's biases. The result of commenting without rule change also becomes possible if commenters are allowed a strategy of "going down fighting" and incentives to do so.

# 3    Methods

## 3.1    Measuring mass engagement and political information

In this section, I develop methods to attribute mass comments to the campaigns that mobilized them and measure the intensity of preferences expressed. To link individual comments to the more sophisticated lobbying efforts they support, I use text reuse and topic models to identify clusters of similar comments, reflecting formal and informal coalitions. Comments with identical text indicate which groups and coalitions also chose to run a mass comment campaign. Within each campaign, I measure the intensity and potential for the movement to grow. To measure intensity, I examine the ratio of high-effort and low-effort comments. To measure potential to grow, I measure the number of comments mobilized indirectly by the campaign. The result is several new measures that paint a picture of mass commenting. Using these new measures of public engagement in agency rulemaking, I identify the conditions under which it occurs and produces different politically-relevant information.

### 3.1.1    Who lobbies?

Previous studies of rulemaking stress the importance of coalitions (**?**). Scholars have measured coalitions of organized groups but have yet to be able to attribute citizen comments to the coalition that mobilized them. Unfortunately, metadata on the authors of comments are often inconsistent and incomplete. As this information is key to identifying influential actors, improving these data is a significant data-organization task. I have collected a corpus of over 70 million comments on over 300,000 proposed rules. The first task will be linking these comments to other data on the rules.

Text search matching organization and individual names across texts, especially those named as comment authors will help systematically link individuals to the groups that mobilized them.This helps to identify formal coalitions of organizations that sign onto the same comment as well as experts and citizens mobilized by advocacy campaigns to submit separate comments.

Having identified who is participating in rulemaking, the next step is to identify who is lobbying together.

### 3.1.2    Who lobbies together?

The Oceana coalition framed its mass mobilization effort to curb the Bureau of Ocean Energy Management's 2017 Proposed Offshore Oil and Gas Leasing Program as a "petition signed by

67,275 self-proclaimed United States residents," suggesting that organizations consider these efforts as akin to petitions. In the same statement, Oceana also claimed the support of "more than 110 East Coast municipalities, 100 Members of Congress, 750 state and local elected officials, and 1,100 business interests, all of whom oppose offshore drilling," suggesting that claims of public and elected official support aim to provide similar kinds of political information.

When actors sign onto the same comment, it is clear that they are lobbying together. This generally takes two forms. Businesses and groups representing allied industries often co-sign carefully crafted suggestions that reflect their common interest. We expect this to occur when the benefits of coordination outweigh the costs (Yackee and Yackee 2006). The other form this take is public campaigns that ask citizens to submit a form letter, often alongside other actions such as protests. These occasional bursts of civic participation may affect rulemaking (Coglianese 2001), but this is yet to be tested. In the first form, many of the businesses are repeat players and I record them individually. In the second form, the advocacy groups are repeat players, and I recorded their participation, but it would be citizens who participate are likely not and I record the number of these comments as an amplitude parameter for the text they signed and I attribute form-letter texts to the advocacy groups promoting them.

Various businesses, advocacy groups, and citizens often comment separately even when they aligned. The comment process is open to anyone and it is often not worthwhile for all actors to coordinate their messages. There may be many dimensions of demands and it is unclear to which coalition many comments belong.

In addition to mapping text re-use, I adapt several statistical models (Bayesian classifiers) of text to classify comments into coalitions. Classifying comments into common groups is a task well suited for a single membership topic model.[18]. This model clusters documents by the frequency with which they use different words. Being classified together does not mean that the documents all address exactly the same distribution of substantive issues, just that how issues are discussed is similar relative to the full set of documents. I start by modeling all comments on each rule (collapsing exactly identical comments to one document) with three topics, which I will then inspect to see how well the comments of named organizations were classified. If three topics appear to sensibly describe the conflict, I tag these topics as "pro, con, other."

In terms of the causal process theorized above, this section focuses on measuring and explaining organizations' lobbying choices (i.e. to only provide technical information or to also mobilize) and

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[18] This is in contrast to the mixture model I use to estimate the distribution of multiple topics in each document and each coalition in section 3.2

public response to mobilization campaigns (the frequency and effort with which people engage). The key explanatory variable is public support for the campaign. The bold arrows in figure 9 indicate the relationships of interest for this step.

Figure 9: Step 1: Explaining Mass Mobilization and Mass Engagement
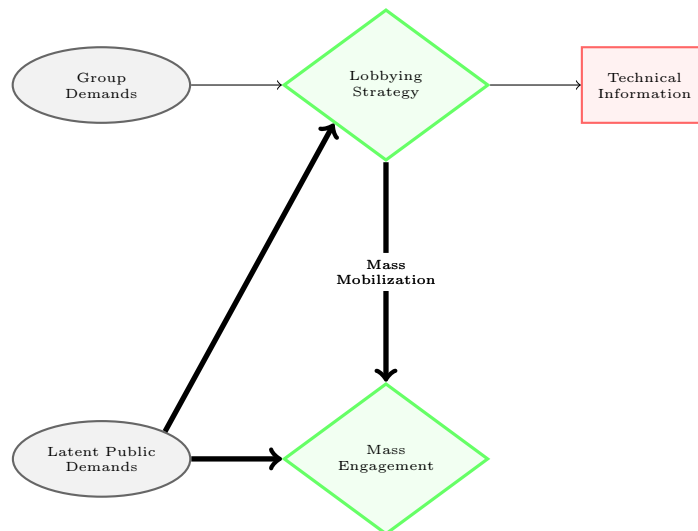


### 3.1.3   Measure the level, intensity, and potential contagion of public engagement.

Dependent variables include the number of people engaged and the effort per comment. I argue that activists' opportunities and strategies explain variation in engagement, which I measure in several ways. First, I measure the total number of comments on the rule. As commenting are the results of two processes: deciding to lobby at all and then deciding to mobilize, the distribution contains many cases where groups may have had success mobilizing but never reach the choice of whether to mobilize or not (perhaps they were unaware of the rule). Once the decision to mobilize has been reached and made, the result of mobilizing is a count process. Thus, the count of comments fits a zero-inflated negative binomial distribution. When focusing on coalitions, we have already subset to cases where mobilization occurred and thus commenting can now be considered a regular count process.

**Effort.** Effort per comment is a continuous measure of the of the number of words people write, omitting any to text longer than 10 words provided by a mobilizing organization. For example, using the form shown in 4, the Sierra Club mobilized more than 47,710 people to submit exactly the same text on the delay of the methane pollution rule, but 7,452 people also took the time to write a personalized comment in addition to the form letter text. However, we may not observe people who have low levels of passion for the issue because they either do not

cross the effort threshold required to comment or opt to write nothing more than the form letter. Thus the low end of the distribution of words is truncated.

**Contagion.** Mass-comment campaigns have wildly different results. Some gather a clean 10,000 copies of (or, more accurately, signatures on) the same comment and call their work done. Others "go viral"—inspiring a mess of further engagement where the original messages are translated through social media posts and news stories. Finally, I count the number of people who use fewer than 10 words matching an organizational comment, plausibly those who were mobilized indirectly, another regular count process.

**Dependent Variables:**

Model 1) Total comments $\sim$ zero-inflated negative binomial;

Model 2) Comments per coalition $\sim$ negative binomial;

Model 3) Effort per comment $\sim$ truncated normal;

Model 4) Contagion $\sim$ negative binomial.

The dependent 2-4 are built using text reuse and bayesian classifiers[19], one observation per coalition per rule. Explanatory variables include agency alignment with Congress and the president (models 1-4), coalition unity and alignment (models 2-4), and coding coalitions as driven more by public or private interests (models 2-3).

**Data.** In his case-study of several rules, Cuéllar (2005) finds that "contrary to conventional wisdom, comments from the lay public make up the vast majority of total comments about some regulations. This shows at least some potential demand among the mass public for a seat at the table in the regulatory process." Having collected over 70 million comments on over 300,000 proposed rules, I am able to offer a much more systematic analysis. Figure 10 shows all comments posted on regulations.gov over time by whether they are exact copies of another comment or not. This highly restrictive definition of what counts as mass engagement captures comments that were certainly mobilized by a campaign. As 10 shows, not only are most comments are from ordinary people, but the vast majority of comments are mobilized by mass commenting campaigns.

The right pane of 10 shows results from a sample of several million comments for which I have digitized the texts. Many of these comments are in support proposed agency rules, as was the case with both the do not call and mercury rule examples. A rough measure of support (whether the comment text includes the word " support " or " oppose ") shows that many more comments

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[19] Ultimately something similar to the correlated topic model (Blei and Lafferty 2005), possibly with lexical priors (Fong and Grimmer 2016) based on organizational comments

Figure 10: Unique vs Form-letter Comments Posted to Regulations.gov 2006-2018
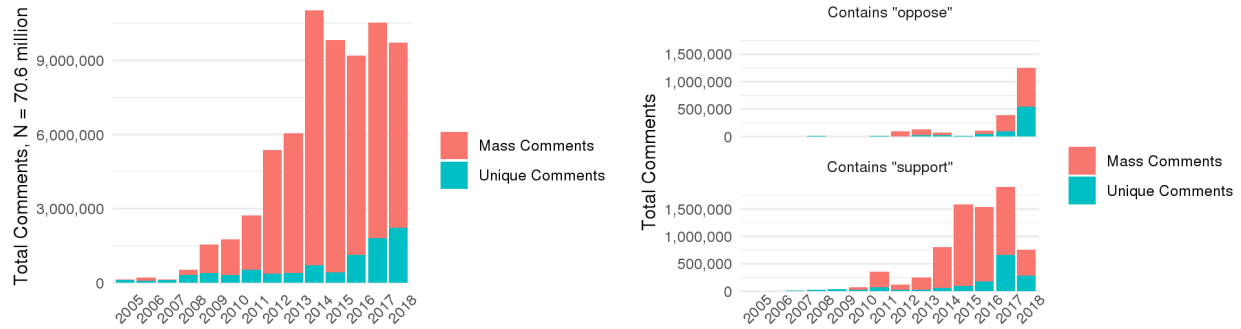


mention support, until 2018, when there is a fairly dramatic reversal in the share of comments mentioning " support " compared to those mentioning ' 'oppose " (figure 10).

## 3.2   Assessing effects on elected officials' oversight behavior

To assess the hypothesis that mass engagement affects the engagement of political principals, I examine the relationship between mass commenting and the behavior of Members of Congress, while attempting to control for other reasons that Members of Congress may comment on a proposed rule. The bold arrow in figure 11 indicates the key relationship in this step.

Figure 11: Modeling the Relationship between Mass Engagement and Political Oversight
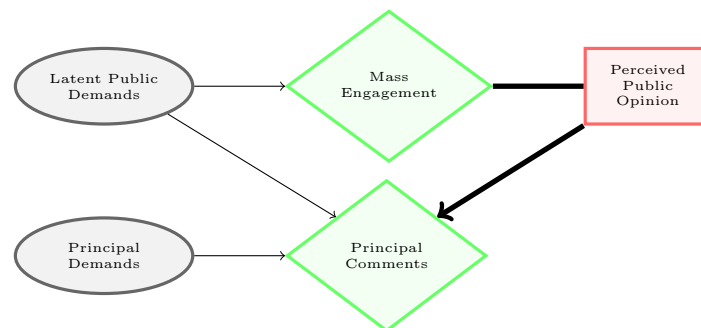


I measure the dependent variables, legislator attention and support, several ways. First, I count the number of times Members of Congress engage the agency across rules and before, during, and after comment periods on rules where lobbying organizations did and did not go public. By engaging the agency, I mean that Members of Congress raise a rule in hearings, committee reports, and personal letters that members send to the agency. Next, I use text analysis to compare the sentiment and rhetoric used by legislators to that used by each coalition.Using texts has several major advantages over other measures of congressional attention and sentiment such

as partisanship (Yaver 2016; Lewis 2008), changes in budget size, or the length of appropriations reports (Bolton and Thrower 2015). Unlike partisanship, it is issue-specific and does not require assumptions about agency partisanship. While budget changes may reflect real costs, the many reasons that budgets change make it difficult to attribute changes to particular agency actions. The length of appropriations subcommittee reports may indicate the amount of attention committees pay to an agency but they do not vary significantly over time and do not indicate whether committee attention is positive or negative.

Specifically, dependent variables include:

Model 1) Comments from Members of Congress on the rule (total, those mentioning mass comments, and those mentioning organizations in the coalition), Each ∼ zero-inflated negative binomial.

Model 2) Share of mentions supporting the coalition, ∼ beta.

Model 3) Rhetorical similarity between comments from the coalition and Members of Congress.

Dependent variables 1-2 are one observation per coalition per rule. Model 3 is one observation per comment from a Member of Congress. The key explanatory variables of interest are the measures of mass engagement created in step 1 (how many and what types of comments). One challenge will be controlling for rule salience, which may affect both public and legislator attention (indeed, both are endogenous to rule salience). Another challenge will be controlling for latent public opinion, which may often, but not exclusively, be revealed to legislators through mass engagement.

## 3.3 Assessing effects on rulemaking and rules

The main dependent variable here is changes in rule text. However assessing policy change is difficult. Thus, I also use other measures of agency responses to lobbying efforts. Agencies may or may not change draft policies or may speed up or delay finalizing them. They write lengthy justifications of their decisions in response to some demands but not others. They may or may not extend the comment period. Measuring actual changes in policy text is more difficult. I aim to use automated methods to systemically identify changes between draft and final rules, parse these textual differences to identify meaningful policy changes, and compare them to demands raised in comments to measure which coalition got their way. Observing policy influence, especially in the final stages of policymaking is difficult. Given the momentum of political agendas and the fact

that much is determined before draft rules are made public, changes are often on the margins. But such marginal victories are also the aim of business and other interest groups. Additionally, my theory suggests that influence is likely only in cases where mass mobilization is (1) aimed at influencing policy and (2) not accurately anticipated by policymakers. Measuring these will also be difficult.

Figure 12: Modeling the Relationship between Political Information and Policy Change
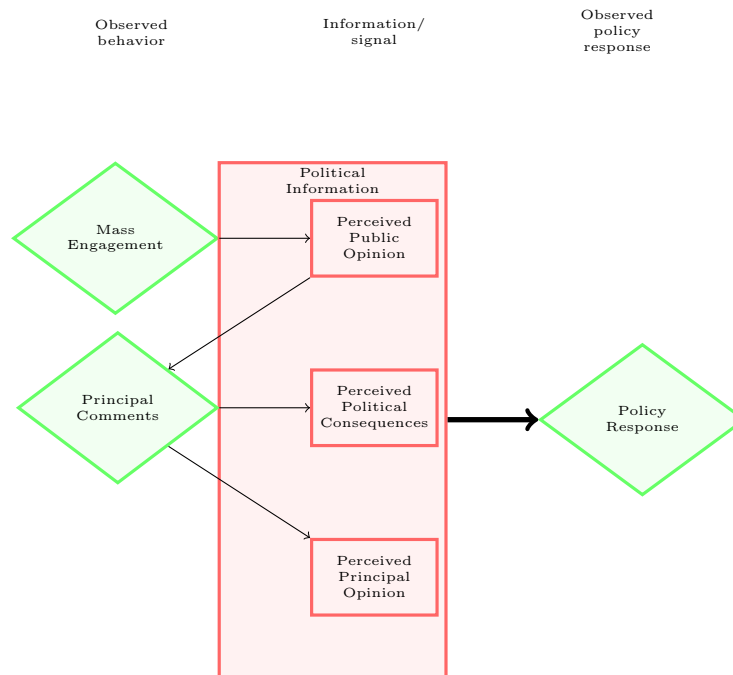


Observational studies of policy decisions are almost always frustrated by the fact that decisionmakers rationally anticipate the actions of those who would influence them, rendering this influence difficult to observe. Thus I expect to observe larger effects in cases where mobilization or the level of engagement achieved was not anticipated by agency staff. However, as long as rulewriters do not perfectly anticipate mass engagement, it should have observable, if depressed, effects.

My method of identifying whether a rule seems to move in the direction requested is similar to leading existing methods—Yackee and Yackee (2006) measure whether commenters requested for more or less regulation—and superior to self-reported influence (Furlong 1997).

I aim to discover latent coalitions by textual similarity (having removed all sentences quoting the agency's draft rule and call for comments), parse policy demands, and estimate relative probabilities that a policy change favors a given coalition. I then model the relationship between

my measures of policy success and coalition size, intensity, and contagion and assess mechanisms by which political information may influence agency decisions.

Most rules address long-defined problems. They are next steps advancing a policy agenda (West and Raso 2013) or the first steps in a new, often reverse, policy direction, it is possible that effects of "going public" are cumulative in a policy area over time, starting out small, but gaining agenda-setting power with sustained public attention. This may not be possible to measure with the rule-focused research design outlined above. However, if sequential rules can be linked to distinct policy agendas, my strategy could be extended to model dynamics over time following Brookhart and Tahk (2015).

**Text as Data**   Existing measures of who gets their way in rulemaking are blunt—hand-coding texts on a few pre-defined and simplified categories such as "pro- or anti-regulation." This is well motivated by theory, but in practice, it is often unclear whether a policy, on its face, increases or decreases government regulation.Another drawback of the hand-coding approach is that one must often read each comment and compare it to the rule change to identify influential groups.

I use computational text-analysis tools to address these concerns. Political scientists have only begun to leverage text-analysis tools to measure political relationships (see Grimmer 2013 on priorities, Klüver and Mahoney 2015 on framing, Wilkerson et al. 2015 on tracing policy ideas). I expand analysis of rulemaking from thousands of documents to hundreds of thousands and from a few variables to many.

**Measuring Policy Change**   As described below, I measure the extent to which the text of a policy becomes more similar or less similar to the text of each public comment.

One way to think about this is that this change represents an increase in utility for those lobbying for the change. Purposeful actors got what they asked for and presumably reap the rewards. All dimensions of disagreement collapse to the latent dimension of utility. Actors participate and form coalitions to the extent that the expected benefits exceed the costs of doing so. Each new layer of law affects politics by altering actors' utility functions.

Taking a broader view of politics offers a less parsimonious, but more direct interpretation. Changes in law may deliver utility, but more precisely they reflect ideas. These may be ideas about "who gets what, when, and how," but also about identities, aspirations, possibilities, whose opinions matter, and who constitutes the political community, which may be difficult to reduce to a single dimension. Focusing on costs and benefits or alone, risks overlooking much

of the ideological and interpretive work lawmaking does in constructing political communities, possibilities, and norms. Public comments in rulemaking, like other forms of policymaking, may often be about more than self-interest.

Policy disagreements are disagreements about words that give governmental force to ideas. Information is an important currency for those trying to influence policy and that rhetoric and framing can affect perceptions of facts and policies. Policy learning can be seen as an updating of where one stands, an updating of beliefs about the what is true about the world and, most specifically, an updating about which words (and thus ideas) ought to be in law. Importantly, policymakers are constantly learning about new problems, facts, and policy ideas about which they had no prior position. Thus new dimensions of disagreement are created every time claims are advanced about new problem definitions, new facts, and new ideas for what the law ought to say.

Estimating spatial ideal points is a leading way of estimating what actors want, especially when we only observe a series of votes. The quantity of interest is what kind of policy actors ideally want, and because voting only tells us whether one is for or against a policy text, we need multiple observations in which an actor (or others who plausibly share their position) falls on each side to begin to narrow down their ideological distance from any given policy. To get multiple observations, we must assume that a number of proposed policies can be placed as different points on the same underlying dimension of disagreement. When it is persuasively argued that a number of these underlying issue dimensions more or less collapse to an even more general dimension, we further increase our observations and thus the information we have about each actor regarding that more general dimension.

When, rather than up or down votes, we have the text of what each actor wanted, we have much more information about where they stand in relation to a policy text. Indeed, instead of needing to uncover more general latent dimensions and estimate actors' positions on them, we directly observe the quantity of interest: the substance, direction, and magnitude of the disagreement in each case. We can cluster these disagreements to make more general statements about the broader nature of disagreements and relative policy potions, but, unlike with voting data, this reduction is not necessary to know the extent to which actors are getting what they want as we can directly observe how much outcome texts incorporate various actors' expressed ideal language. Flattening proposed changes in texts to $n$ dimensions where $n$ is fewer than the number of unique demands made by all actors may help descriptively, but is not required analytically. For example, we may reduce textual policy demands to left and right ideologies or

preferences for more or less government, and doing so can be descriptively useful, but it is neither necessary nor helpful for answering the question of whose ideas end up in law.

Importantly, my project does not attempt to answer what actors want in general, *a priori* of any policy proposal. Without some reference point (existing policy, for example) what actors want may be impossible to define. I assess what commenters want *given* a proposed policy. What commenters request may not be a sincere representation of their ideal policy, but it is plausibly what they really want given what they believe is possible. While this may be insufficient for estimating ideal points, it is sufficient for measuring who gets what they ask for.

If the primary aim is to identify policy actors' ideological proximity to each other, the analysis can be reduced to the similarity and difference in their ideal policy texts, summed across all areas or within broad policy areas. If alternatively, we ask whose ideas end up in policy, we want to know how similar the policy outcome was to the specific suggestions of each actor and the frequency of changes in their proposed direction.A finding that the words one actor suggested be added to a policy were twice as likely to appear in the final policy as average is a powerful and intuitive description of where power to shape policy resides.[20]

**Measuring the extent commenters got what they asked for**   Participants may ask for two general kinds of things: they ask for specific changes to identified parts of the text or they may ask for a broad shift in emphasis, what Jones and Baumgartner (2005) call a policy image. For example, on the same Clean Power Plan rule, some may ask the Environmental Protection Agency to make specific changes to two sentences having to do with the classification of power plants.Others may ask for broad reframing to focus less on economic costs and more on environmental equity and the effects of pollution on children. Many commenters do both. I thus collect two key pieces of information from the rulemaking record: the text comments and the change from the draft rule to the final. Both approaches require the same initial steps. To identify how exactly the rule changed from draft to final, I use text reuse methods to identify what is the same and has been added or subtracted. The result of these two steps is the changes requested by commenters and textual change in the rule.

To identify the adoption of specific demands, I use the same text reuse methods to identify any matches between textual changes in the rule and the changes requested by commenters. If final rules include the specific phrases suggested in comments, this is evidence that these commenters got some of what they asked for. The significance of this kind of relationship between

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[20]This is, perhaps, even more powerful than saying that the policy tended to shift toward their ideal point on some latent dimension, where the exact content anchoring the ideal point and the dimension are at least slightly ambiguous.

texts could be measured by how many words were copied, weighted by the forcefulness of these words. For example, I could create a dictionary of legally-significant words such as "shall, "must, "enforcement, and "standard. and weight textual alignment scores accordingly. Text reuse can be measured for individual commenters and averaged over coalitions.

To identify the adoption of demands for broader shifts in policy image and emphasis, I propose a relational topic modeling approach. In contrast to the single topic model used to classify commenters into coalitions, this approach assumes that each text is a mixture over a number of topics. Each word token in a document is assigned to exactly one topic. Words and thus documents have distributions over topics. The extent to which distribution of topics that changed from the draft to the final is similar to the distribution in comments may be seen as a measure of whether the commenter got what the kind of change in policy emphasis they asked for.[21]

**Relating comments to overall rule changes** Next I combine topic modeling approaches with text reuse methods, allowing better measurement not just of what is discussed but the topic distributions of what is being added, cut, copied, or otherwise receiving special attention. Of course, all topic models focus on the relationship between text, but by making some of the text units themselves a relationship between texts with text reuse methods, the topic model takes a "difference in difference" (e.g. what was added or deleted) form. Much of the rule content is retained from one version to the next, but some content changes. We want to know how these changes relate to the changes proposed by sophisticated comments.
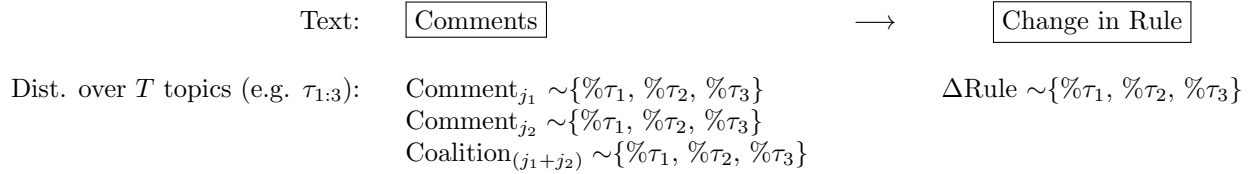
To measure the relationship between comments and policy change, I draw on the *Latent Dirichlet Allocation* (LDA: Blei et al. 2003) model. Unlike the model used to estimate coalition membership, this is a mixed-member model. In LDA, each document can be represented as a vector of topic proportions, i.e. what fraction of the words in that document belong to each topic (Blei et al. 2003). For example, in a model of a rulemaking under the Environmental Protection Agency's Clean Power Plan, "climate," "adaptation," "carbon," and a dozen other words may co-occur and indicate a topic about climate change. The words, "clean", "air," and "health" may also co-occur and have relatively high frequencies in a topic that seems to be

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[21] Some rulemaking processes also have a commenting period before the draft policy is published. In these cases, commenters respond to an Advanced Notice of Proposed Rulemaking (ANPRM). A similar approach can be used in these processes with the key difference that similarities between comments and the draft rule (now the outcome text), either in specific text fragments or general topic distribution, take on a different meaning. Instead of representing changes to a policy text, it may represent common understandings of what policy already was or had to be on this topic. Changes in the final rule more plausibly represent differences in what policy could be. With respect to the ANPRM and proposed rule, it is more difficult to infer that the same result would not have occurred without their comments. While such counterfactual inference is not my purpose and both measure the same core phenomena of the words actors want becoming policy, interpretation of what this means must attend to this difference.

about air quality. The change in the rule from NPRM to Final Rule and each comment would have a $\pi$ proportion of words belonging to the *climate change* topic ($\%\tau_{Climate} = \pi_{Climate}$). This may be a relatively high portion for Climate Action Coalition comments and a low portion for American Lung Association comments ($\pi_{Climate,CAC} > \pi_{Climate,ALA}$) compared to the air quality topic, which may be the opposite ($\pi_{AirQuality,CAC} < \pi_{AirQuality,ALA}$). If the rule changes to focus more on climate change from draft to final rule ($\pi_{Climate,\Delta EPA} > \pi_{AirQuality,\Delta EPA}$), the Climate Action Coalition may be seen as more successful than the American Lung Association with respect to the broad emphasis of the regulation. This offers a new way to capture what Jones and Baumgartner (2005) call *attention allocation*, the changing weights on policy images and issues: in this case, what the Environmental Protection Agency ought to do.

Figure 13: The Latent Dirichlet Model (LDA)

Text:   | Comments |                          $\longrightarrow$                     | Change in Rule |

Dist. over $T$ topics (e.g. $\tau_{1:3}$):    Comment$_{j_1}$ $\sim\{\%\tau_1, \%\tau_2, \%\tau_3\}$          $\Delta$Rule $\sim\{\%\tau_1, \%\tau_2, \%\tau_3\}$
Comment$_{j_2}$ $\sim\{\%\tau_1, \%\tau_2, \%\tau_3\}$
Coalition$_{(j_1+j_2)}$ $\sim\{\%\tau_1, \%\tau_2, \%\tau_3\}$

I focus on draft-to-final rule change by selecting only the text that was added or subtracted. This can be thought of as a versioning problem where the agency updates the rule. To focus on what changed, I excluded sentences that appear verbatim in the NPRM. I use the Smith-Waterman alignment algorithm (developed for identifying DNA matches and commonly used in plagiarism software) to identify sections of text that are close matches. Wilkerson (2015) successfully employs this approach to identify content copied from various bills in the legislative processes leading to the Affordable Care Act.

The percent of each topic $\tau$ within each document $j$ is estimated as $\pi_{j,\tau}$ where:

$$\tau_{i,j}|W_{i,j} \sim Multinomial(\pi_{w_{i,j}})$$

$$\pi_j \sim Dirichlet(\alpha)$$

$$W_{i,j} \sim Multinomial(\rho_{\tau,w})$$

$$\rho_{\tau,w} \sim Dirichlet(\beta)$$

We observe the total number of unique words $(w_1, ..., w_W)$ in the vocabulary of all documents and $w_{i,j}$ is the word observed at the $i$th token in document $j$. All texts are "tokenized" by giving

each word[22] a unique index $i$. If token $i$ belongs to topic $\tau$, then the probability that the token is word $w$ is the topic-specific probability $\pi_{\tau,w}$. At the document level, $\pi_{\tau,j}$ is the estimated proportion of topic $\tau$ for document $j$.

$T$, $\alpha$, and $\beta$ are defined. $T$ is the number of topics $(\tau_1, ... \tau_T)$ where $\tau_{i,j}$ is the topic of the $i$th token in document $j$. Each token comes from exactly one topic. $\alpha$ is the parameter of the prior on the per-document topic distributions, and $\beta$ is the parameter of the prior on the per-topic word distributions. $\rho_{\tau,w}$ is the distribution over $w$ words in each topic $\tau$, i.e. the probability of drawing the $w$th word of the vocabulary for topic $\tau$.

The result is a quantitative measure of the alignment between suggestions made in comments and text added or subtracted from the draft to final rule. A similar approach can estimate the relationship between ANPRM comments and the draft rule text, omitting the draft-to-final text reuse step. Credible intervals for these comment and topic-specific alignment scores can be calculated from posterior distributions.

# 4    Supplemental case study:  The environmental justice movement

This chapter explores the role of public comments in rulemaking by focusing on their role in the environmental justice movement. Environmental justice concerns focus on the unequal access to healthy environments and protection from harms caused by things like pollution and climate change. The ways in which agencies consider environmental justice highlights how rulemaking has distributive consequences, how the public comment process creates temporary political communities, and how claims raised by activists are addressed. Examining over 20,000 rulemaking processes at agencies known to address environmental justice concerns, I find that when public comments raise environmental justice concerns, these concerns are more likely to be addressed in the final rule. In this preliminary analysis, however, the number of comments mobilized is not related to success. While we cannot infer that agencies addressing environmental justice concerns is caused by the public comments themselves, comments may be a good proxy for lobbying in general. Furthermore, the correlation between raising environmental justice and policy changes is largest and most significant in agencies with missions focused on environmental and distributional policy, i.e. the kinds of bureaucrats who we may expect to have institutional and cognitive

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[22]For topic estimation, I use single words, but tokenizing may be done by sentence or by any n-gram string of characters or words.

processes primed to be most responsive to environmental justice concerns.

This case illustrates the way that activists use public comments to inject ideas directly into the rulemaking process. I focus on the environmental justice movement because it offers a broad but tractable scope for analysis and shows what is at stake in the politics of rulemaking. How rules consider environmental justice issues illustrates how rulemaking constructs a political community of "relevant" stakeholders and "appropriate" criteria to evaluate policy consequences. Thus, the idea of environmental justice is an example of how social movements can mobilize norms and evaluative frameworks that are connected to organizational identities, mission, and reputations and that have implications for bureaucratic decisions.

The use of an environmental justice frame does not always imply the same communities of concern. Environmental justice emerged out of movements against environmental racism, especially the disposal of toxic substances in communities of color (Bullard 1993). However, the term quickly took on a wider array of meanings, encompassing any marginalized group. In 1994 the Bill Clinton signed an Executive order on Environmental Justice that required all parts of the federal government to make "addressing disproportionately high and adverse human health or environmental effects of programs, policies, and activities on minority populations and low-income populations" a core aspect of their mission. This meant considering disproportionate effects during rulemaking.

Fundamental definitions of the public good and minority rights are implicit in agency rules. The public comment process offers an opportunity to protest these definitions. Protest is one way that marginalized groups can communicate opinions on issues to government officials (Gillion 2013). In the case of the EPA's Mercury Rules, two such issues were decisive. First, as with many forms of pollution, mercury-emitting power plants are concentrated in low-income, often non-White communities. Second, certain populations consume much more locally-caught freshwater fish, a major vector of Mercury toxicity. Studies inspired by the political controversy around the Mercury Rules found high risk among communities included "Hispanic, Vietnamese, and Laotian populations in California and Great Lakes tribal populations (Chippewa and Ojibwe) active on ceded territories around the Great Lakes" (EPA 2012). Thus the standards that EPA chooses are fundamentally dependent on whom the regulation aims to protect: the average citizen, local residents, or fishing communities. This decision has disparate effects based on race and class because of disparate effects based on geography and different cultural practices. Such disparate impacts are often called environmental justice issues.

In December 2000, when the EPA first announced its intention to regulate Mercury from

power plants, the notice published in the Federal Register did not address environmental justice issues such as the disparate effects of mercury on certain populations. Risks were only discussed in reference to "the U.S. population" (EPA 2000). When the first draft rule was published, it only discussed the effects of the rule on regulated entities, noting that "Other types of entities not listed could also be affected" (EPA 2002). Commenting on this draft, Heather McCausland of the Alaska Community Action on Toxics (ACAT) wrote:

> "The amount of methyl-mercury and other bioaccumulative chemicals consumed by Alaskans (especially Alaskan Natives) could potentially be much higher than is assumed...The Alaska Native mortality rate for babies which according to the CDC is 70% higher than the United States average. Indigenous Arctic & Alaskan Native populations are some of the most polluted populations in the world (http://www.amap.no/). Global transport & old military sites contaminate us too"

After receiving hundreds of thousands of comments and pressure from tribal organizations, a revised proposed rule echoed McCausland's comment noting that "Some subpopulations in the U.S., such as Native Americans, Southeast Asian Americans, and lower-income subsistence fishers, may rely on fish as a primary source of nutrition and/or for cultural practices. Therefore, they consume larger amounts of fish than the general population and may be at a greater risk of the adverse health effects from Hg due to increased exposure" (EPA 2004).

After nearly a million additional public comments, a revised proposed rule ultimately included five pages of analysis of the disparate impacts on "vulnerable populations" including "African Americans," "Hispanic," "Native American," and "Other and Multi-racial" groups (EPA 2011). In the final rule, the language of "vulnerable populations " was replaced with "minority, low income, and indigenous populations" (EPA 2012). EPA had also conducted an analysis of subpopulations with particularly high potential risks exposure due to high rates of fish consumption as well as an additional analysis of the distribution of mortality risk by to race.

Of this second round of comments, over 200 explicitly raised the environmental justice issues. The Little River Band of Ottawa Indians expressed the Tribe's "frustration at trying to impress upon the EPA the multiple and profound impacts of mercury contamination from a Tribal perspective. Not to mention the obligations under treaties to participate with tribes on a Government to Government basis. At present, no such meetings have occurred in any meaningful manner with EPA Region V, the EPA National American Indian Environmental Office, nor the State of Michigans Department of Environmental Quality." They conclude that "Although EPA

purported to consider environmental justice as it developed its Clean Air Mercury Rule, it failed utterly. In this rulemaking, EPA perpetuated, rather than ameliorated, a long history of cultural discrimination against tribes and their members" (Sprague 2011). Did comments like these play a role in EPA's changed analysis of who Mercury limits should aim to protect?

Given the many potential sources of influence, it may be difficult to attribute causal effects of particular comments on a given policy. However, comments may serve as a good proxy for the general mobilization of groups and individuals around an administrative process, and it is not clear why EPA would not address environmental justice in the first draft of a rule and then add it to subsequent drafts in the absence of activists mobilization. Electoral politics does not offer an easy explanation. The notice proposing the Mercury Rule was issued by the Clinton administration, the same administration that issued the Executive Order on Environmental Justice, and the subsequent drafts that did address environmental justice issues were published by the Bush administration, which had a more contentious relationship with environmental justice advocates, while Republicans controlled both houses of Congress. The expansion of the analysis from one draft to the next seems to be in response to activist pressure.

Mobilization around ideas like environmental justice may even affect policy discourse when agency administrators are explicitly hostile to the cause. For example, in an October 2017 proposed rule to repeal restrictions on power plant pollution, the Trump EPA acknowledges that "low-income and minority communities located in proximity to [power plants] may have experienced an improvement in air quality as a result of the emissions reductions." Because the Executive Order requires attention to environmental justice and because the Obama EPA discussed it when promulgating the rule, the environmental justice cannot safely be ignored. However, the Trump EPA contends, the Obama EPA "did not address lower household energy bills for low-income households [and that] workers losing jobs in regions or occupations with weak labor markets would have been most vulnerable" (EPA 2017). As of December 6, 2018, this proposed rule has received over 150,000 public comments.

Tracing ideas like environmental justice through the rulemaking record may offer one way to study the mechanisms by which social movements do or do not influence bureaucratic policymaking. Specifically, if rules are proposed without attention to environmental justice concerns, but environmental justice concerns are raised in the public comments and then appear in the final policy, this may be evidence that mobilization mattered.

Environmental justice is certainly not the only way to observe such effects, but it has some convenient properties. First, policies framed as "environmental" issues are, unlike issues like

issues like civil rights and immigration, inconsistently racialized and, unlike issues like taxes and spending, inconsistently focus on *distributions* of costs and benefits. Despite almost always having disparate impacts, an environmental frame often creates a human-environment distinction and shifts attention to non-human objects such as air, water, food, or landscapes and away from the distribution of access to these objects or protection from them when they are contaminated. Second, compared to other ideas around which people mobilize, "environmental justice" is a fairly distinctive phrase. Most people who use this phrase share a general definitional foundation. Third, this phrase is fairly common when the idea is being discussed, i.e. there are not many synonyms and groups raising equity concerns on "environmental" issues commonly refer to environmental justice. Many who use the narrower, related term "environmental racism" also use "environmental justice" in their advocacy. Finally, the term is relevant to rulemaking records in particular because of an Executive Order issued in 1994 by President Clinton "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" which required all agency actions and policies to consider environmental justice implications. This does not mean that all draft or final rules do so, but when they do, they tend to cite the executive order and explicitly discuss environmental justice. For the same reason, commenters, especially sophisticated ones, who critique draft rules also use the cite this executive order and use this language.

## 4.1   Data

In order to examine whether the environmental justice movement's mass mobilization of letter-writing influences the discourse around policies, I use the text of draft rules, public comments, and final rules retrieved from regulations.gov. Figure 14 compares the use of the term "environmental justice" in draft policies, public comments on these drafts, and the final versions of the policies. I collected all documents from the website regulations.gov and selected 58,789 that use the phrase "environmental justice." This includes 5,109 proposed rules, 17,539 public comments on these proposed rules, and 10,418 final rules. I then added all draft and final rules from all 35 agencies that have published at least one rule addressing environmental justice, an additional 40,096 documents.[23]

Notably, more than twice as many final rules as proposed rules contain the phrase "environmental justice." This suggests a systematic element in how agency policymakers are revising

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[23]This may be an over-inclusive sample and in future work, I may attempt to refine this sample to rules that plausibly relate to environmental justice issues.

draft rules and responding to public comment. Below, I investigate the extent that this change from the draft to final policy is related to environmental justice issues being raised in the public comments.

Figure 14: Number of Rules where Environmental Justice Appears in the Record (Left) and Number of Comments per Notice or Proposed Rule (Right). Text indicates the agency for the most commented on rules.
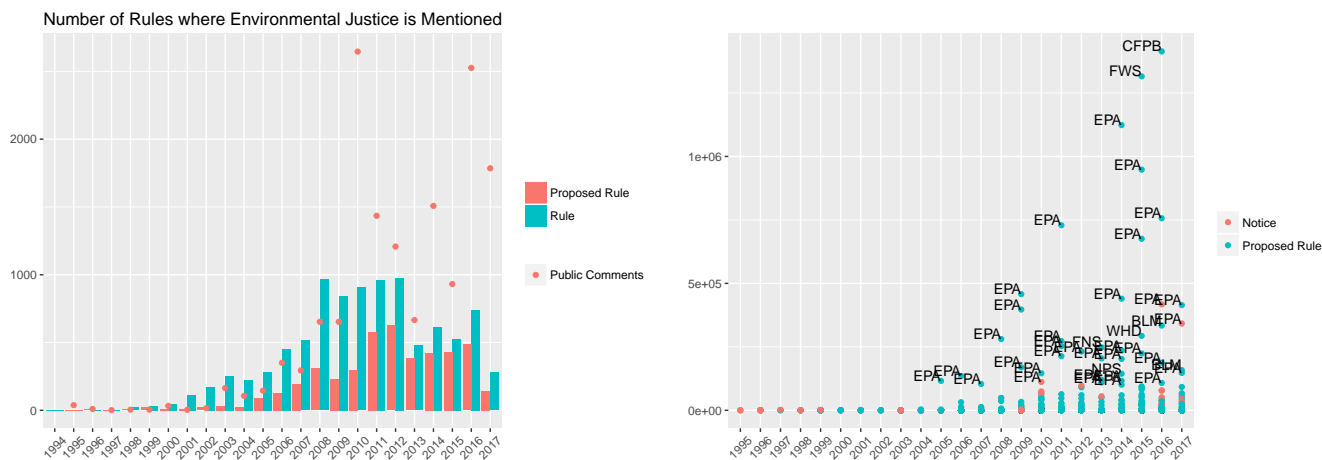


Figure 14 shows that the number of rules and comments increasing over time. This may reflect increased salience of this concept, but it may primarily be the result of the increasing prevalence of searchable texts. Similarly, the increased number of rules where comments mention environmental justice may reflect growth in the movement but also may reflect more overall comments as technology has made commenting easier. Testing the hypotheses that comments raising environmental justice concerns are related to specific rules where environmental justice is addressed in the final but not in the draft requires rule-specific analysis.

What we can say from Figure 14 is that each year, more final rules directly address environmental justice when their draft did not. Additionally, there are many rules where environmental justice is mentioned in the public comments and not in the draft. Recently, there are also many rules where environmental justice is raised in the comments but does not make it into the final draft.[24]

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[24]Note that, because not all comments are searchable, this is an underestimate of the number of comments mentioning environmental justice, so we cannot conclude that before 2010, rules were mentioning environmental justice when the comments had not. Additionally, this does not include comments like those of the Bishops who raise justice issues but do not use the phrase "environmental justice."

## 4.2   Second-order Representation

Before analysis of whether comments matter, I briefly describe who these commenters are. This is what Seifter (2016) calls "second-order" representation. It is insufficient to know which groups participate. We also need to know who these groups represent.

I investigate who is raising environmental justice concerns in two ways. First, I identify the top organizational commenters such as tribes, businesses, and nonprofits that are using environmental justice language and investigate who these groups represent. Second, for comments where a citizen signed their name, I compare surnames to their racial and ethnic identity propensities with respect to the U.S. census. Together these two pieces of information allow me to comment on "second order" representation, i.e. not just the extent to which public comments relate to government policy, but the extent to which public comments are representative of the public and of the groups they claim to represent.

Table 3: Organizations mobilizing mass comment campaigns mentioning "environmental justice"

|    | Organization | Comments | Rules |
|----|---------------|----------|-------|
| 1  | Earthjustice | 1114782 | 28 |
| 2  | Natural Resources Defense Council | 340554 | 8 |
| 3  | Sierra Club | 349841 | 5 |
| 4  | Alliance for Climate Protection | 253867 | 5 |
| 5  | WE ACT for Environmental Justice | 2402 | 3 |
| 6  | CREDO | 112879 | 2 |
| 7  | Union of Concerned Scientists | 43559 | 2 |
| 8  | Earthworks | 308 | 2 |
| 9  | Communities for a Better Environment | 21 | 2 |
| 10 | Southern Company | 8 | 2 |
| 11 | Move On | 165948 | 1 |
| 12 | Care2 | 70450 | 1 |
| 13 | The Pew Charitable Trusts | 63769 | 1 |
| 14 | Hudson-Environmental Action | 35000 | 1 |
| 15 | Democracy for America | 4426 | 1 |

Table 3 shows the top 15 organizational commenters who used the phrase "environmental justice" in their comments, including all organizations who did so on more than one rule or mobilized more than 100,000 such comments. The six organizations responsible for mobilizing more than 100,000 comments and several others on the list are national nonprofit advocacy groups. We Act and Communities for a Better Environment are both more community-based groups focusing primarily on environmental justice issues. Southern Company is the only corporation on the list

The top mobilizer, Earthjustice, is primarily engaged in litigation on behalf environmental causes. Their website boasts 2.2 million supporters, but it is not clear who they are or if they play

any role in the advocacy strategy. A search on the website returns 360 results for "Environmental Justice," with the top results from staff biographies who work on more local or targeted work such as environmental conditions for the incarcerated, but the environmental justice language used on the main page is relatively mild. For example, "We are fighting for a future where children can breathe clean air, no matter where they live" (Earthjustice 2017). The website does contain Spanish language content.

The Natural Resources Defense Council is similar to Earthjustice–a national nonprofit funded by donations and focused on litigation–but they also lobby. CREDO Action and MoveOn are more generic progressive mobilizers who lack a systematic focus on environmental justice issues, but occasionally leverage their very large membership lists to support campaigns environmental justice campaigns led by others (MoveOn.org 2017; CREDO 2017). The Alliance for Climate Protection is a more of an elite political group founded by former Vice President Al Gore.

We Act and Communities for a Better Environment both have environmental justice in their central mission statement. We Act was founded by community leaders in Harlem, NY, to fight environmental racisms and advocate for better air quality (WEACT 2017). Communities for a Better Environment has projects throughout California but is particularly active in Oakland (**?**). Much of the content of their website is in both English and Spanish. Both organizations focus primarily on "low-income communities of color" and thus frame their work with respect to race and class. While both organizations participated in national policymaking We Act is more focused on communities in Harlem and New York whereas Communities for a Better Environment casts a wider frame: "CBEs vision of environmental justice is global–thats why the organization continues to participate in such international efforts as the Indigenous Environmental Network and the Global Week of Action for Climate Justice" (CBECAL 2017).

The Southern Company comments are too few to count as mass mobilization. Companies do sometimes fund mobilization campaigns, but all of 8 of these comments were submitted by the Southern Company. Interestingly, the company repeatedly raises research into environmental justice concerns in order to frame these issues as a legitimate but unresolved scientific debate that is not yet conclusive enough to base regulations on: "People with lower SES are exposed to almost an order of magnitude more traffic near their homes (Reynolds et al., 2001), and live closer to large industrial sites and are exposed to more industrial air pollution (Jerrett et al., 2001). Legitimate health concerns must be addressed. But adopting standards with a scientific basis so uncertain that health improvement cannot be assured is not sound public health policy." Like many companies they claim to represent their customers as "electric generating companies

and their customers are expected to bear much of the burden" of regulations (Hobson 2004).

With respect to second-order representation, it appears that the groups most often using the language of environmental justice may do so sincerely but do not themselves represent affected communities. Several groups representing local communities and led by community leaders have participated, but not nearly as often or with the same intensity as the "big greens." This highlights the importance of resources as a condition for mobilizing. Not all groups who may benefit from political information are able to leverage it because they lack the resources to invest in a campaign. However, it may be the case that smaller, more member-driven groups join coalitions with groups with more resources who mobilize on their behalf. More work is needed to identify coalitions to assess this possibility.

Finally, a third class of commenter raises environmental justice issues as a way to re-frame them as ongoing debates and thus undermine their urgency. I call this reason for engaging as "breaking a perceived consensus." In a way, the fact that an energy company felt compelled to acknowledge and question environmental justice concerns suggests their importance for policy outcomes.

Next, I attempt to estimate the racial distribution of those who comment using environmental justice language. This can only be done for individuals who commented separately from mobilizing organizations and signed their full name on their comment. Figure 15 shows two ways of estimating the racial distribution of commenters who raise "environmental justice" concerns in their comments. Both methods use the reported racial identities associated with surnames as recorded in the 2010 census[25] and are based on a limited sample of 327 commenters who signed their name with a surname matching census records. The first is based on the proportion of people with a given surname that identified as belonging to each racial category (from this limited set of options). The estimated proportion of each race for this sample is simply the average of proportions identified with each surname. This is likely the most accurate way to represent the racial distribution of a set of surnames, but it does not assign specific individuals to racial categories. The second method does. It predicts the race of each individual in the sample based on their surname given the distribution of racial categories reported by people with that surname and the proportion of each race in the U.S. population. Thus, while a surname may be more common among people who identify as black rather than as white, there may still be more White people with that surname and this method would predict that the person is White. For this

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[25]I recode "Hispanic" as "Latinx" in both cases because the prediction method assumes a forced choice that includes "Hispanic" as a primary racial category

reason, the portion of individuals predicted to be White (right) is higher than in the probabilistic distribution (left).

Figure 15: Probabilistic (Left) and Predicted (Right) Race from Census Surnames
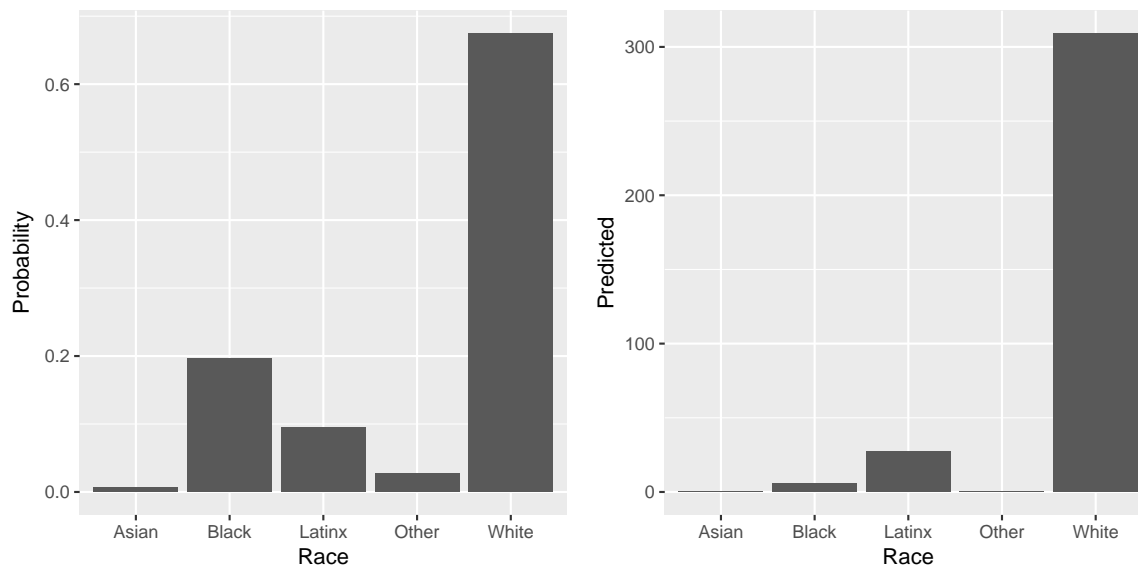


Compared to estimates from the 2010 census, this sample of commenters appears to be disproportionately Black and less than proportionately Latinx or Asian, with just slightly fewer Whites relative to the national population. This makes sense given that environmental justice theorizing and activism have been led by African American's (Bullard 1993).

Figure 16 shows the most common words used in comments with respect to the predicted race of each commenter in the sample. As there are very few predicted non-White commenters in the sample, it is unwise to infer too much from this figure.

Figure 16: Common words used in comments mentioning "environmental justice" by predicted race
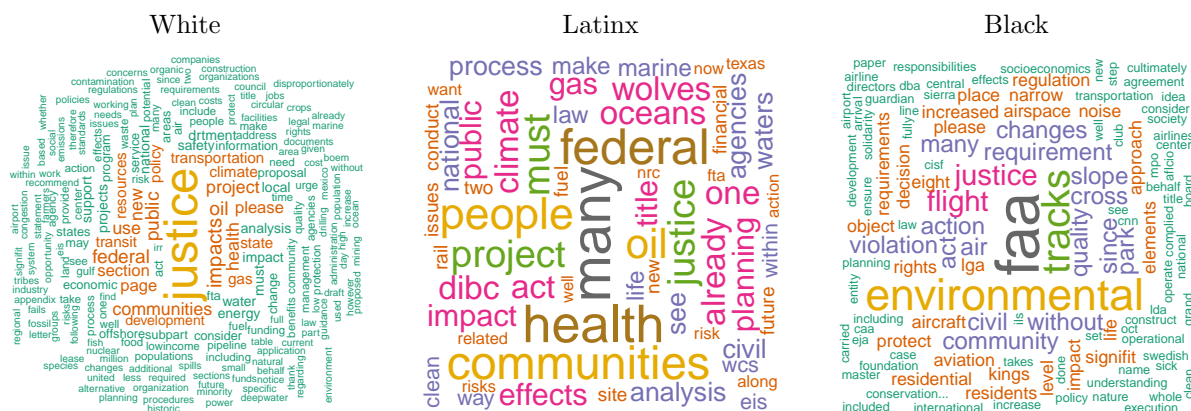
## 4.3   Results: Are final rules more likely to address environmental justice after comments do so?

This subsection presents preliminary results from an analysis of draft rules, comments, and final rules. Descriptively, figure 17 shows that in general, most rules that do not address environmental justice in the draft but these issues are raised in the comments, do not end up addressing them in the final version. It appears that it may have been the case in 2006 and 2007 but since then the number of rules receiving comments raising environmental justice concerns has grown while the number of rules that end up adding it has remained the same. Since 2015, there has been a decline in both the number of rules adding environmental justice and the number of rules where commenters demanded it, especially in 2017. One way to interpret figure 17 would be to say that commenters saw a potential ally in President Obama and increased their demands for environmental justice, but that these increased demands had little effect. However, a better approach would be to estimate a statistical model of the effect of comments on the change from draft to final rules. This is what I do.

Figure 17: Rules With Comments Addressing EJ on a Draft That Did Not
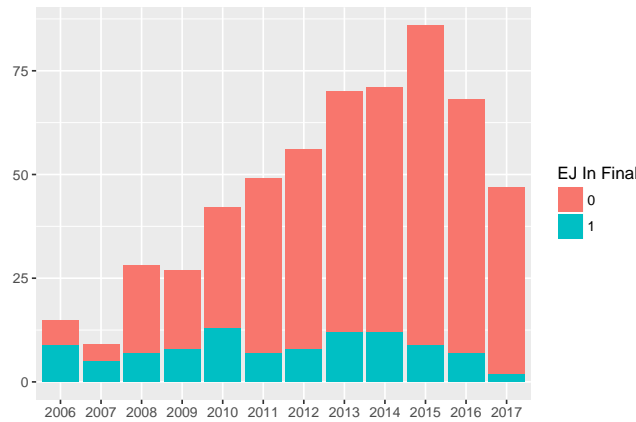


For this preliminary analysis, I estimate a logit regression where the outcome is whether environmental justice was addressed in the final rule and the predictors are whether it was addressed in the draft rule, whether it was addressed in the comments, and the total number of comments received.

$$EJin\hat{F}inal = \begin{cases} 1 & if \qquad \beta_0 + \beta_1 EJinDraft + \beta_2 EJinComments + \beta_3 TotalComments + \epsilon > 0 \\ 0 & otherwise \end{cases}$$

As logit coefficients are not easily interpretable, I calculate predicted probabilities for the types of rules of interest, i.e. rules where environmental justice was not raised in the draft, *EJinDraft*=0. Figure 18 shows the predicted probability of a final rule addressing environmental justice when the draft rule did not for all agencies that have ever published a rule addressing environmental justice (left) and the EPA alone (right). The EPA accounts for nearly two-thirds of the cases where environmental justice is raised in the comments on a draft rule that did not address it. The total number of comments mentioning "environmental justice" had a substantively small and statistically insignificant effect on policy. As the flat lines on both figures show, the predicted probability of adding the phrase "environmental justice" does not increase with the number of comments. Environmental justice being raised in any one comment does have a statistically significant and substantively large effect.

Overall the probability across all agencies of adding environmental justice increases from under 2% to about 9%. At the EPA, the probability triples from about 6% to about 18%.

Figure 18: Proposed Rules Not Addressing Environmental Justice (Left: All agencies. Right: Environmental Protection Agency)
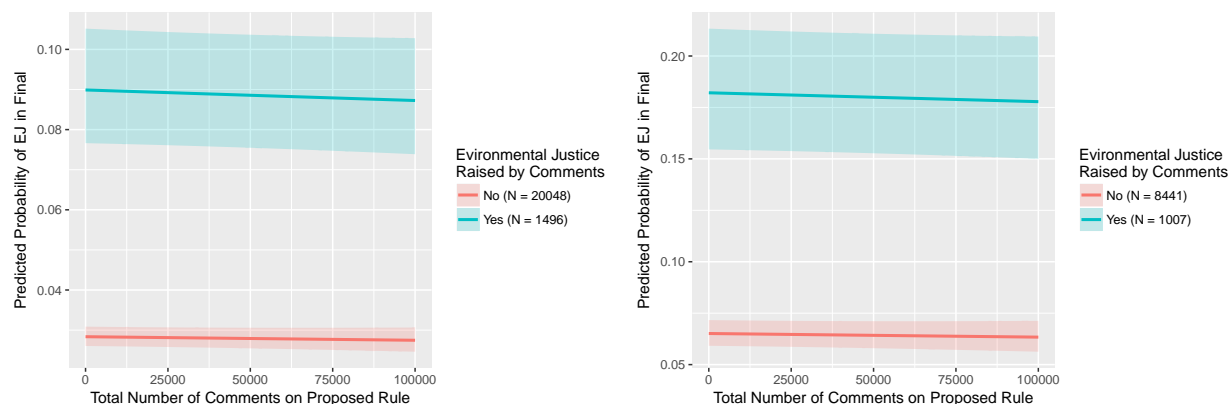


To examine the degree to which this generalizes across agencies, figure 19 presents predicted probabilities modeled for each agency, showing that the range of predicted probabilities is systematically higher when environmental justice, but with varying degrees of confidence. There is considerable variation among agencies. Point estimates are only shown for agencies where confidence intervals do not overlap. Only a few agencies have statistically significant different estimates, but the agencies where effects are largest are exactly the agencies we would expect to be influenced by comments raising environmental justice concerns, i.e. agencies that deal with environmental issues with distributive consequences.

As the EPA accounts for the largest portion of the data, we are most confident in this re-

Figure 19: Proposed Rules Not Addressing Environmental Justice
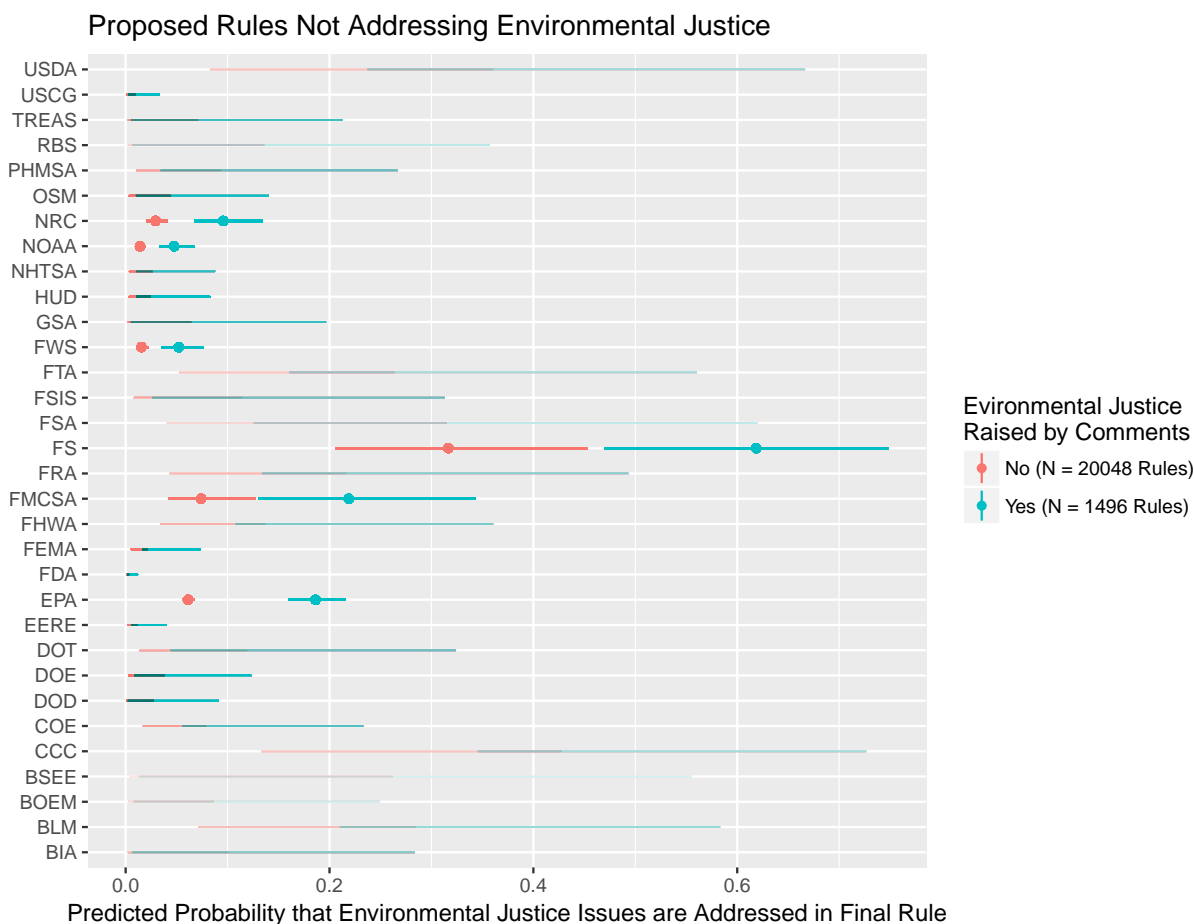


sult, but the EPA is not the agency with the largest predicted effects. The Forest Service has a predicted 30% difference between rules that do and do not receive comments raising environmental justices concerns. This may be because the forest service is mainly in the business of managing forests, leasing timber rights, and controlling wildfires. These types of decisions may have acute distributional effects that may not be the initial focus of the agency. Once raised, however, addressing such effects fits squarely in their mission. Though not statically significant the Department of Agriculture and Bureau of Land Management, who make similar kinds of decisions, are also susceptible to environmental justice claims. Similarly, the Federal Railroad Administration, Department of Transportation, Federal Highway Administration, Federal Motor Carrier Safety Administration, and the Federal Transportation Administration (which aids local transportation projects) all have large probability distributions. These agencies are making decisions about infrastructure projects with implications for neighborhood environments and

air quality. Environmental justice may often come up, but there may be a lot of variation in whether the agency then decides if they are relevant to transportation policies and projects that are primarily about neither environmental nor justice concerns.

Research agencies, including the National Research Council, National Oceanographic and Atmospheric Administration and Fish and Wildlife Service all had statistically significant but small spreads. In these cases, we can be confident of the correlation but understand that it is a rare occurrence, which makes sense if most research does not have direct environmental justice consequences, but agencies are open to adding analysis of these issues if when they are raised.

## 4.4  Conclusion

This analysis has illustrated the importance of ideas in policymaking and cross-sectional statistical results suggest that when issue frames like environmental justice are raised there is a higher probability that policymakers consider the effects on marginalized populations. Importantly this relationship seems to be conditional on an institutional environment that is predisposed to such an analysis. Furthermore, it is important to note that the policy outcomes suggested by environmental justice analysis depend on how minority populations are defined. In some cases, those raising environmental justice concerns present it as an issue of wealth or income inequality, leading policy to account for disparate impacts on low-income populations. In other cases, groups raise claims rooted in cultural practices, such as fish consumption among certain tribes. As occurred in the Mercury Rule, the analysis in subsequent drafts of the policy used evaluative criteria specific to these communities.

The ability of a frame like environmental justice to construct certain populations as deserving of consideration means that policy outcomes will depend on the specific environmental justice concerns raised. In this respect, second-order representation may become important. National advocacy organizations may frequently request that regulators protect "all people" or even "low-income communities of color." However, this more generic advocacy may not lead to the same outcomes as groups that present specific local environmental justice grievances that are unique to a community. In between generic progressive advocacy organizations and community-based organizations are organizations like Earthjustice who, despite their national focus, frequently engaged in community-specific litigation and thus raise these local concerns in national policymaking.

In the end, the above analysis offers some clarity on a poorly understood but important mechanism of American policymaking. It offers some hope that citizen opinions may be heard through

direct democracy institutions built into bureaucratic policymaking. The examination of second-order participation validates some of the skepticism about who participates. It is elite groups who participate, even with respect to an issue like environmental justice. However, government responsiveness does not seem to depend on mass mobilization or elite support. Compared to cases where environmental justice issues were not raised, when they are, we see a significantly higher probability that they will be addressed by policymakers.

# 5    Conclusion

This research will add to our understanding of how bureaucratic policymaking fits with the practice of democracy. If input solicited from ordinary people has little effect on policy outcomes, directly or indirectly, it may be best understood as providing a veneer of democratic legitimacy on an essentially technocratic and/or elite-driven process. The legitimacy of bureaucratic policymaking is said to depend on the premise that rulemaking provides an outlet for public voice (Croley 2003; Rosenbloom 2003). Yet, it is not just the opportunity to engage, but actual engagement that matters (Herz 2018), and we lack an empirical base necessary to evaluate whether any legitimacy the public comment process may provide is deserved, even if people believe that their comments matter (Yackee 2014). If mass engagement does shape agency decisions, a new research program will be needed to investigate who exactly these campaigns mobilize and represent.

# 6   Appendix

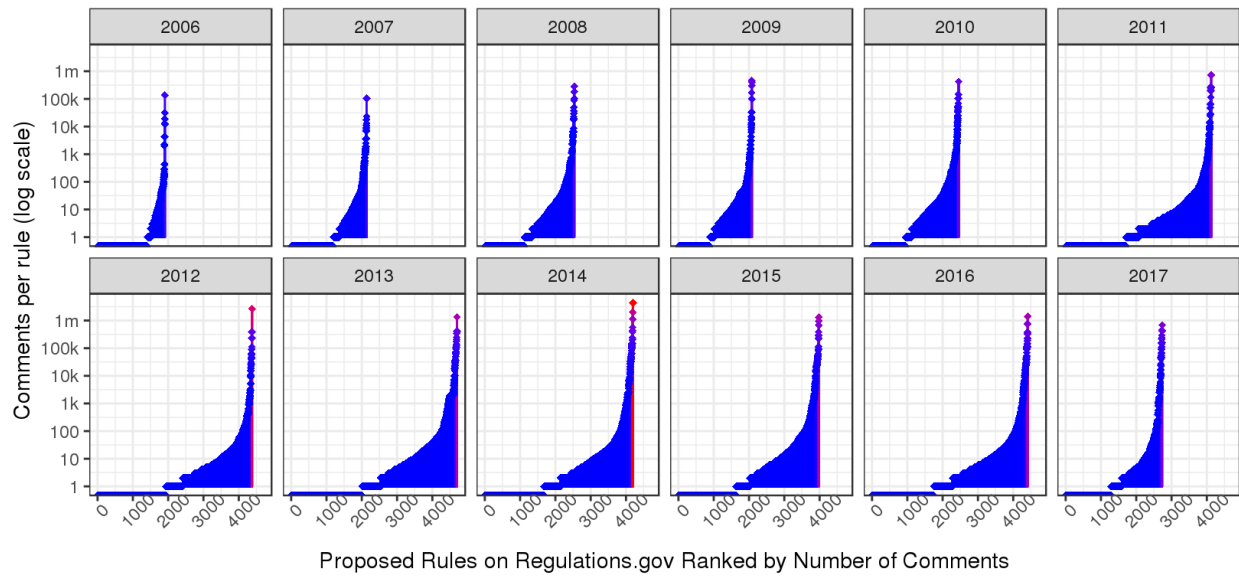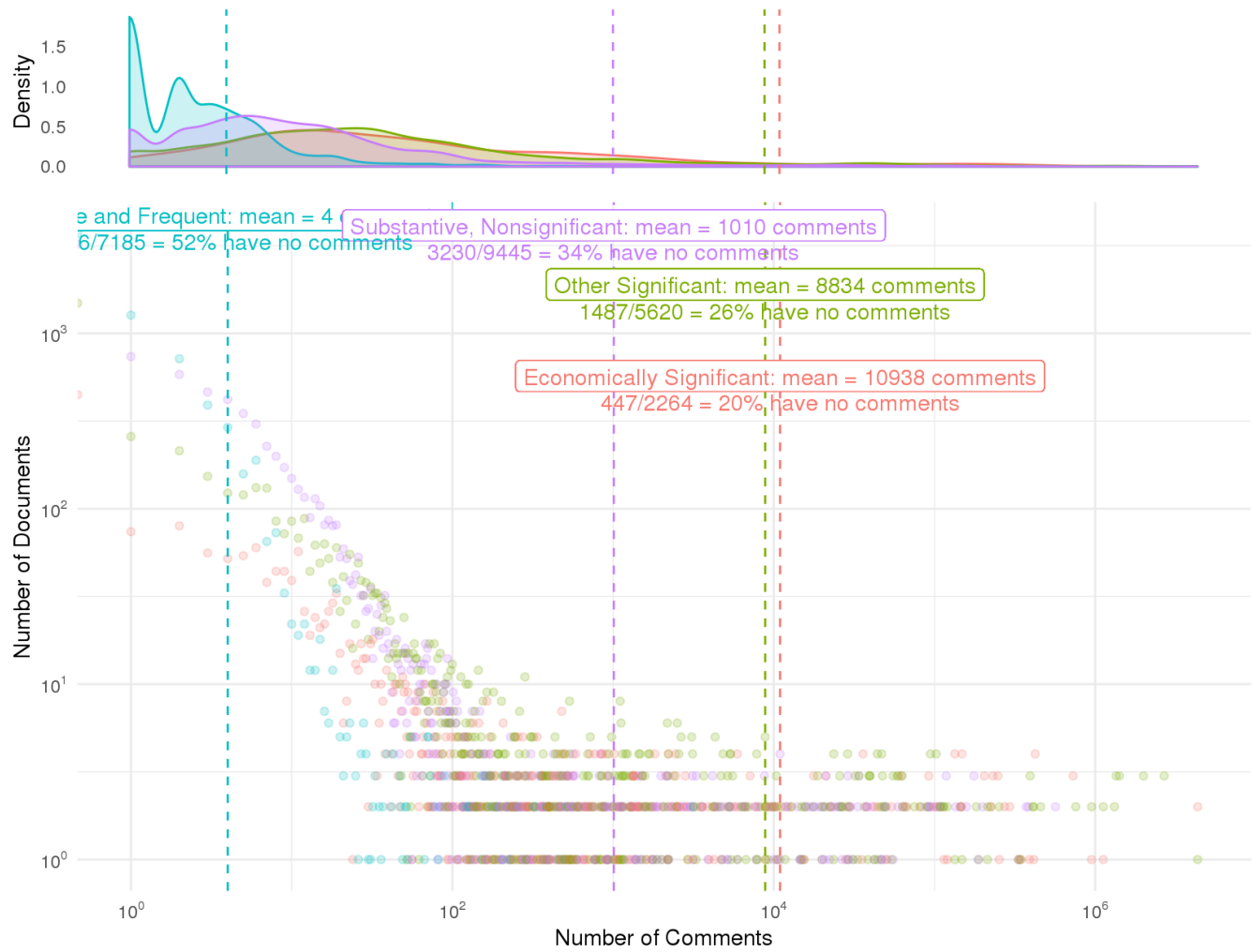Figure 20: Rules ranked by number of comments posted to regulations.gov



Proposed Rules on Regulations.gov Ranked by Number of Comments

Figure 21: Major and non-major rules on regulations.gov

Figure 22: Rules on regulations.gov by priority level

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