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Contents

Theories of bureaucratic policymaking neither explain nor account for the occasional bursts of civic engagement in agency rulemaking mobilized by public pressure campaigns. My dissertation examines who participates in public pressure campaigns and why, whether they affect congressional oversight, and whether they affect policy. I assess the policy influence of public pressure campaigns across all rules open for public comment regulations.gov and then, more specifically, through a study of the impact of environmental justice campaigns. I employ a range of quantitative and qualitative methods, with contributions mostly in the field of text analysis. By combining algorithms underlying plagiarism detection with statistical analysis of word use, I advance methods to identify lobbying coalitions and influence across texts.

The intellectual merit of studying public comments

Much of our knowledge about civic participation beyond voting comes from surveys and qualitative studies of particular groups. My project allows us to study the civic actions of millions of people directly through their own words and the specific policies on which they comment. The data I have collected allows for both quantitative and interpretive analyses. The first three chapters of my dissertation present large-n analyses of public participation, congressional oversight, and the influence of public pressure campaigns. The final chapter uses a mix of quantitative text analysis and interpretive analysis to show the discursive impact of environmental justice campaigns in rulemaking.

Participatory processes like public comment periods, where government agencies must solicit public input on draft policies, are said to provide political oversight opportunities (Balla, 1998; Mccubbins and Schwartz, 1984), democratic legitimacy (Croley, 2003; Rosenbloom, 2003), and new technical information (Yackee, 2006; Nelson and Yackee, 2012). While recent scholarship on agency policymaking has shed light on sophisticated lobbying by businesses, we know surprisingly little about the vast majority of public comments which are submitted by ordinary people as part of public pressure campaigns.[1] Activists frequently target agency policymaking with letter-writing campaigns, petitions, protests, and mobilizing people to attend hearings, all classic examples of "civic engagement" (Verba and Nie, 1987). **Yet civic engagement remains poorly understood in the context of bureaucratic policymaking.**

The occasional bursts of civic engagement in bureaucratic policymaking raise practical and theoretical questions for the practice of democracy. These questions, in turn, hinge on unanswered empirical questions: Do these public pressure campaigns affect policy? If so, by what mechanisms? Existing research finds that commenters believe their comments matter (Yackee, 2015) and that the number of public comments varies across agencies and policy processes (Moore, 2017), but the relationship between the scale of public engagement and policy change remains poorly understood. While administrative law scholars and practitioners have long pondered what to make of mass comment campaigns, political scientists have had surprisingly little to say about this brand of civic participation.

[1] As I show in Judge-Lord (2019), most comments submitted to regulations.gov are part of organized campaigns, more akin to petition signatures than sophisticated lobbying. Indeed, approximately 40 million out of 50 million (80%) of these public comments mobilized by just 100 advocacy organizations.

The contentious politics that inspire the majority of public comments have no place in leading models of bureaucratic policymaking and have largely been ignored by political scientists. Foundational scholarship on rulemaking (Furlong and Kerwin, 2005, Furlong (1997), Furlong (1998), Kerwin and Furlong (2011)) focuses on interest group lobbying. Theoretical models focus on how agencies learn about policy problems, negotiate or avoid accountability to various principals, or balance interest-group demands.[2]

To the extent scholars address the input of ordinary people at all, both existing theory and empirical scholarship suggest skepticism that it matters. (By "ordinary" people, I simply mean people who are not professional policy-influencers.) Empirical scholarship finds that economic elites and business groups dominate American politics in general (Gilens and Page, 2014) and rulemaking in particular. While some are optimistic 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), most studies find that participants in rulemaking often represent elites and business interests (Seifter, 2016; Crow, Albright and Koebele, 2015; Wagner, Barnes and Peters, 2011; West, 2009; Yackee and Yackee, 2006; Yackee, 2006; Golden, 1998; Haeder and Yackee, 2015; Cook, 2017).

Scholars are thus skeptical about rulemaking as a venue for collective action. As a result, public pressure campaigns are dismissed as epiphenomenal to bargaining with political principals or interest groups. Indeed, almost all empirical studies of rulemaking discard unsophisticated comments from ordinary people, as evident from a comprehensive review of scholarship on "The Politics of Rulemaking" by Yackee (2019), who finds skepticism about citizen comments, but no studies analyzing public pressure campaigns as a lobbying tactic:

> "Kerwin and Furlong (2011) point out that a citizen must know not only that a regulation is being formulated but also how and when to participate. This is a high bar for most Americans. Second, to be influential during rulemaking, commenters may require resources and technical expertise. As Epstein, Heidt and Farina (2014) suggest, agency rule-writers—who are often chosen because of their technical or policy-specific expertise—privilege the type of data-driven arguments and reasoning that are not common to citizen comments." (p. 10)

For any particular lay commenter, this conclusion seems inescapable; individuals acting alone are unlikely to affect policy. But groups occasionally mobilize a large number of people, usually behind a more sophisticated lobbying effort. These bursts of civic participation may affect rulemaking (Coglianese, 2001), but **this intuition has yet to be tested.**

[2]On learning, see Kerwin and Furlong (2011) and empirical studies by Yackee (2012), Cook (2017), Gordon and Rashin (2018), and Walters (2019). See Gailmard and Patty (2017) and Libgober (2018) for information-based models where comments reveal information to the agency. On accountability to elected officials, see Furlong (1997), Nou and Stiglitz (2016), Potter (2017*b*), Woods (2018), and Yackee and Yackee (2009). Potter (2014) develops 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). A key assumption of Libgober's (2018) model is that bureaucrats have a distribution of preferences over interest group positions, about which they are uncertain unless groups reveal their preferences through commenting.

Public pressure is a political resource. An organization's ability to expand the scope of conflict by mobilizing a large number of people can be a valuable political resource (Schattschneider, 1975). 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. Scholars who understand mobilization as a tactic (Furlong, 1997; Kerwin and Furlong, 2011) have focused on how organizations mobilize their membership. I expand on this understanding of mobilization as a lobbying tactic to include a campaign's broader audience, more akin to the concept of an attentive public (Key, 1961) or issue public (Converse, 1964).

Public pressure campaigns evoke the public interest and representation. Appeals to the government are almost always couched in the language of public interest, even when true motivations are private (Schattschneider, 1975). When lobbying during rulemaking, groups often make dubious 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. Theorists debate whether 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 may help broader interests to distinguish themselves from truly narrower ones. It suggests that the organization is not "memberless" (Skocpol, 2003) in the sense that they can demonstrate some verifiable public support.[3]

With no systematic study of the scale and impact of public participation in rulemaking, it is impossible to answer normative questions about how participatory processes like public comment periods may enhance or undermine various democratic ideals. Scholars' neglect of mass comment campaigns is surprising given that most people are only aware of agency rulemaking when it is the target of a public pressure campaign. While most rules receive little attention, the ease of online mobilizing and commenting has, like other forms of civic participation (Boulianne, 2018), created exponential increases in the number of rulemaking processes in which thousands and even millions of people engage.

The general failure to explain or account for public pressure campaigns in models of bureaucratic policymaking is also striking in light of how agencies advertise public comment periods as an opportunity for a voice in government decisions. 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" and "Participate today!" Public commenting on proposed agency rules is described as "an important part of democracy" (WSJ 2017), "often held out as 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 democracy."

Most public comments are, in fact, of the type suggested by the solicitations on Regulations.gov—ordinary people voicing opinions on a proposed policy. They do not provide useful technical information or suggest specific edits to policy texts like the interest group comments that have

[3]Public support can be faked or inflated using "astroturf" tactics, but such campaigns have observably different patterns of engagement.

thus far captured the attention of political scientists. If they add information to rulemaking, it is a different, more political flavor of information. It is plausible that public pressure campaigns affect the politics of these policy processes, but this remains untested. Indeed, we have much to understand about the causes and effects of these campaigns before we are in a position to ask if they help groups to influence policy. Most critically, we must understand who organizes public pressure campaigns and why.

Public pressure campaigns expand civic participation in policymaking.[4] Surely, those who engage are far from representative of the broader public (Verba and Nie, 1987), but in many ways, they must be more representative than the handful of political insiders who participate in most policy processes. If the usual participants have "an upper-class accent" (Schattschneider, 1942), does adding thousands of more voices dilute this bias? This depends on how people are mobilized. If public pressure is mobilized by the usual participants to create an impression of public support, it may merely legitimize the demands of powerful interest groups.

Is civic engagement resulting from public pressure campaigns better understood as "astroturf" or "grassroots" participation? In short, I find much more evidence of grassroots participation than astroturf participation. I argue 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, and I develop methods to measure these patterns.[5]

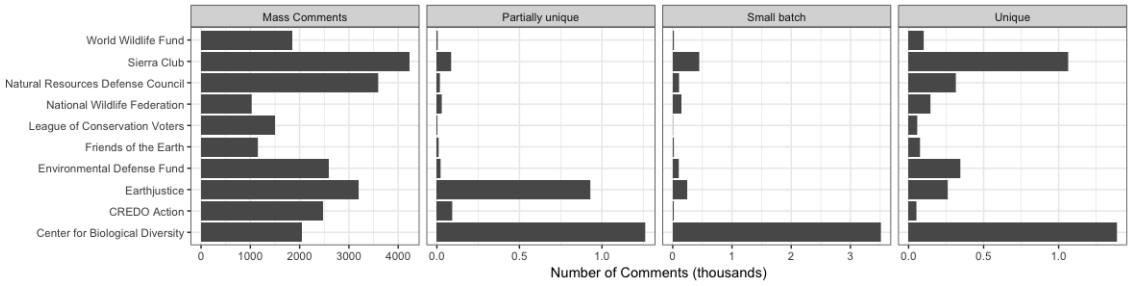
To study civic engagement and influence in rulemaking, I collect over 70 million public comments using the regulations.gov API. About 50 million of these comments are on proposed rules (over 16,000 proposed rules from 144 agencies from 2005 to 2018). Unfortunately, metadata on the authors of comments and their organizational affiliations are inconsistent and incomplete. As this information is key to identifying influential actors, completing these data is a major task for my dissertation and the main target of my proposed project. I must identify organizations responsible for public pressure campaigns. Through an iterative combination of automated search methods and hand-coding, I have identified organizations for over 40 million comments. Of these, the top 100 mobilizing organizations each mobilized between 55 thousand and 4.2 million comments (see Figure 1). **Coding the remaining comments is a major task necessary to complete this analysis.**

Having identified who is participating in rulemaking, the next step is to determine who is lobbying together. Studies of rulemaking stress the importance of coalitions (Yackee and Yackee, 2006, Dwidar2019). Scholars have measured coalitions of organized groups but have yet to attribute citizen comments to the coalition that mobilized them.

[4]If defining "civic participation" as "acts aimed at influencing governmental decisions (Verba and Nie, 1987, p. 2), signing a petition or form comment counts. However, some consider true participation to be deliberative, which mass comment campaigns are not. Other criteria posed by normative theorists that participation should be"genuine," "informed," or "reasoned" are more difficult to assess. Normative theorists may debate whether deliberation among a small number of people is preferable to a large number of people simply expressing their preferences, but empirically, public participation in bureaucratic policymaking is much more the latter (Shapiro, 2008).

[5]For more on these methods, see Judge-Lord (2019). These measures capture similar statistics to questions posed by Verba and Nie (1987, p. 9): "How much participation is there, what kind is it, and from what segments of society does it come?"

Figure 1: Top mobilizers of comments posted to regulations.gov

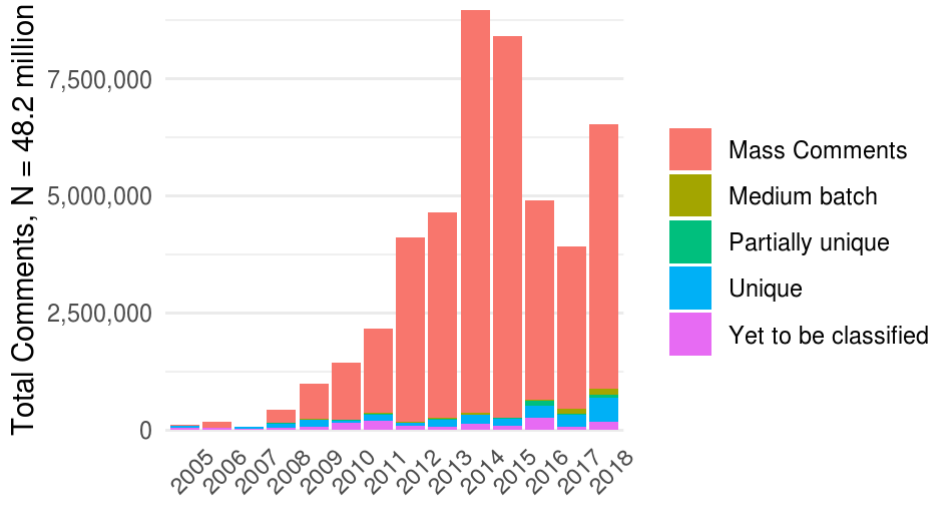


I identify coalitions using text reuse and clustering methods. I identify comments that are not identical but share a 10-word (or "10-gram") string using a moving window function looping over each possible pair of texts to identify matches.[6] When actors sign onto the same comment, it is clear that they are lobbying together. However, various businesses, advocacy groups, and citizens often comment separately, even when they are aligned. Thus, in addition to mapping text re-use, for rules with a large number of comments, I use statistical models of text to classify comments into coalitions. I cluster 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 they use similar words relative to the full set of documents. I start by modeling all comments on each rule (collapsing identical comments to one document) with two and three clusters, which I then inspect to see how well the comments of named organizations were classified. If the two cluster model most sensibly describes the conflict, I label these clusters "pro" and "con" If the three-cluster model more sensibly describes the conflict, I label these clusters as "pro, con, other." If neither fits well, I increase the number of clusters as needed.

Most public comments result from public pressure campaigns. Figure 2 shows all comments posted on regulations.gov over time. I call comments that have between 2 and 99 identical copies "medium batch" because such comments generally reflect coordinated efforts among interest groups but not a public pressure strategy that involves mobilizing ordinary people. Even relatively unsuccessful public pressure campaigns yield far more than 99 comments. Comments that have either 100 or more identical copies or were uploaded in bulk batches of at least 100 are then "mass comments" that were certainly mobilized by a public pressure campaign. Figure 2 shows that public pressure campaigns mobilize the vast majority of comments. Over 80% of the 48 million comments on proposed rules posted to regulations.gov were mobilized by just 100 organizations. In other words, most comments are from ordinary people mobilized by a few public interest organizations.

[6]For more about this method and comparisons with related partial matching methods such as the Smith-Waterman algorithm, see Casas, Denny and Wilkerson (2017) and Judge-Lord (2017).

Figure 2: Comments on Draft Rules Posted to Regulations.gov 2006-2018



The intellectual merit of studying oversight and representation

With the shift in policymaking from Congress to the bureaucracy, lobbying the agencies is often a legislator's only way to affect policy. Agencies also have strategic reasons to meet congressional demands, including securing desired authorizations and budgets. Bureaucrats have incentives to build relationships and reputations that enhance their standing among members of Congress, and they actively do so (Carpenter, 2002). If an agency aims to grow its coalition of political supporters, they should frequently accommodate congressional requests.

Evidence is emerging that legislator attention can shape agency behavior. Ritchie and You (2018) find that legislator requests influenced Department of Labor decisions. Mills and Kalaf-Hughes (2015) find agencies less likely to grant the requests of junior members of Congress, consistent with past findings on distributive politics (Lazarus, 2010).

What drives legislators contacts with agencies? Empowered by new data, only a few studies have offered explanations. Powell, Judge-Lord and Grimmer (2020) find that corporate campaign contributions correlate with legislators writing to agencies on behalf of those companies. Other studies show that legislators contacting agencies is driven by oversight (Ritchie, 2017; Lowande, 2018, Judge-Lord, Grimmer and Powell (2018)), constituent complaints and media attention (Lowande, 2018), a legislator's identities (Lowande, Ritchie and Lauterbach, 2018). Ritchie (2017) finds that lobbying the bureaucracy is a way to advance policy goals when they conflict with their party's agenda. My project focuses on another likely driver: public attention mobilized by pressure groups. **This grant would fund the systematic identification and coding of comments from Members of Congress in order to determine when legislators are aligned with a public pressure campaigns.**

The novel and often unanticipated results emerging from data on legislators writing to agencies suggest that this form of oversight and representation is fertile ground for reexamining theories of congressional behavior and interbranch relations.

This project will produce new data on congressional oversight and representation. While I focus on the relationship between public pressure campaigns, legislator comments, and influence in rulemaking, the large dataset of rulemaking comments from Members of Congress created through this project will enable a broad range of studies of legislator behavior. The metadata on rulemaking comments that I have collected do not identify which comments are from Members of Congress. My search algorithms have detected thousands of comments from legislators, but thousands remain to be identified and coded. By applying my codebook to comments that I have identified as potentially from Members of Congress (given their length and keywords), undergraduate RAs will help identify the legislator, their position on the proposed rule, and any organizations or lobbying coalition they may be supporting.

The intellectual merit of studying influence in rulemaking

The volume of legal requirements emerging from executive agencies dwarfs lawmaking in Congress, in part because agency rules are revised much more frequently than statutory law (Wagner et al., 2017). 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 grants 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 require 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.

In addition to contributions to the study of civic participation and congressional oversight, this project directly contributes to a growing literature on bureaucratic politics by developing methods to identify interest group influence, whether through public pressure campaigns or sophisticated lobbying.

Studies of interest-group influence in rulemaking have largely focused on sophisticated lobbying efforts of business groups (Yackee and Yackee, 2006; Libgober, 2020). Meetings between agency officials and firms spike before an agency issues a policy (de Figueiredo and Kim, 2004) and firms that meet with federal regulators before a rule is issued receive abnormally high stock market returns upon its release (Libgober, 2019). A key insight from this scholarship is that *technical information* is the currency of insider lobbying.

Incorporating political information into theories of bureaucratic policymaking

How, if at all, should scholars incorporate public pressure campaigns into models of bureaucratic policymaking? I argue that public pressure campaigns produces potentially valuable

political information about latent public opinion and the political power of the mobilizing coalition. 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, by affecting the oversight behavior of elected officials.

Public pressure campaigns reveal political information. I build on three insights. First, Furlong (1997) and Kerwin and Furlong (2011) identify mobilization as a tactic. The organizations that they surveyed reported that mobilizing large numbers of people is among the most effective lobbying tactics. Second, Nelson and Yackee (2012) identify *political information* as 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 broader forms of mass mobilization: "strategic recruitment, we theorize, mobilizes new actors to participate in the policymaking process, bringing with them novel technical and political information."

I argue that, regarding political information, this logic extends to non-experts. The number and distribution of ordinary supporters may matter because it suggests a *public* consensus. Instead of bolstering *scientific* claims, a perceived public consensus bolsters *political* claims. Finally, Furlong (1998), Yackee (2006), and others distinguish between direct and indirect forms of interest group influence in rulemaking. This distinction is especially important for political information, which may be most influential through indirect channels, such as through the oversight actions of elected officials. In short, to understand how groups lobby in rulemaking, we must understand public pressure campaigns as a tactic aimed at producing political information that may have direct and indirect impacts on policymaking.

Mobilizing citizens and generating new political information are key functions of interest groups in a democracy (Mansbridge, 1992; Mahoney, 2007). Campaigns inform agencies about the distribution and intensity of opinions that are often too nuanced to estimate a priori. Many questions that arise in rulemaking lack analogous public opinion polling questions, making mass commenting a unique source of political information. Most members of the public and their elected representatives may only learn about the issue and take a position as a result of a public pressure campaign (Hutchings, 2003). Political information may be especially influential if decisionmakers perceive a consensus.[7]

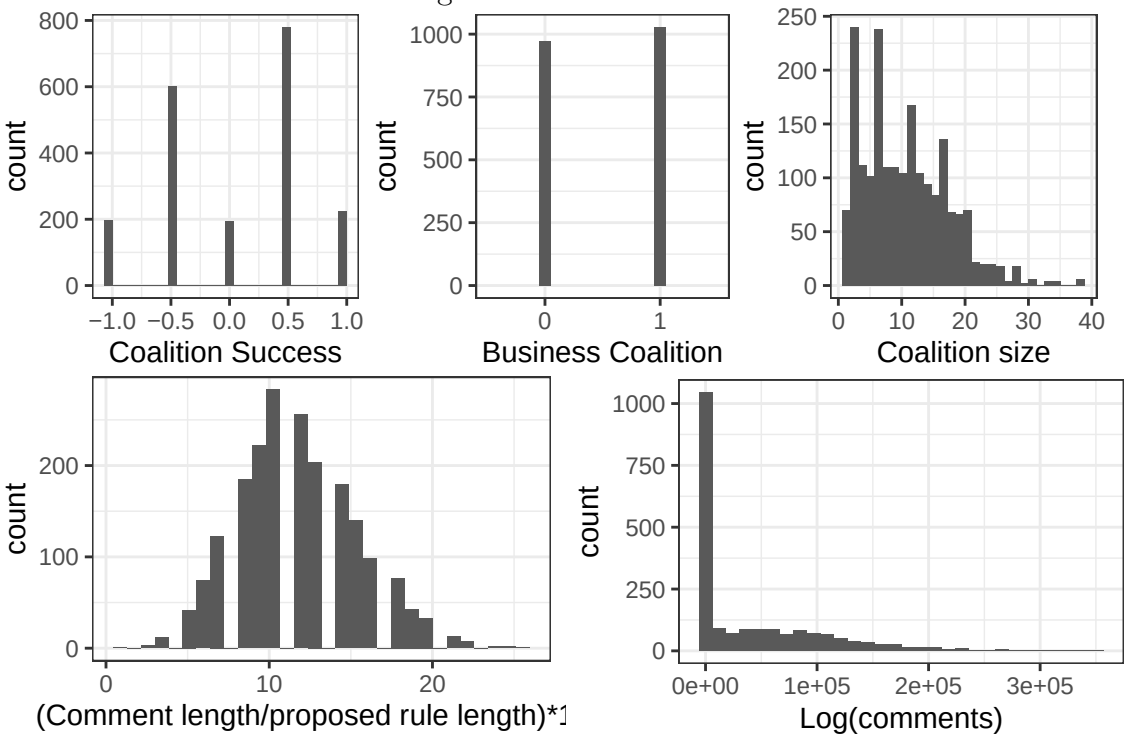
Simulated Results

To illustrate my planned analysis, I simulate data for the variables identified by existing research and my theory of political information. Several of these variables, including whether a commenter got what they asked for (*lobbying success*) and whether the organization is a business (*business coalition*) require applying my codebook to the comment data. **The real data required for this analysis would be a outcome of this project.**

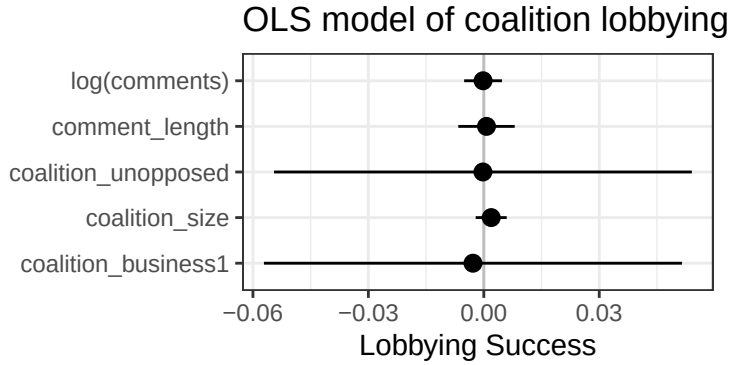
[7] A consensus among interest groups (Golden, 1998; Yackee, 2006), especially business unity (Yackee and Yackee, 2006; Haeder and Yackee, 2015), predicts policy change, though it is not clear if this is a result of strategic calculation, a perceived obligation due to the normative power of consensus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

Dependent variable: Given the 5-point influence scale in my codebook, I draw *lobbying success* from a discrete distribution {-1, -.5, 0, .5, 1}.

Explanatory variables: Research on rulemaking asserts that the size of a coalition (Nelson and Yackee, 2012) and whether it is a business coalition (Yackee and Yackee, 2006; Libgober, 2020) are key predictors of lobbying success. *Coalition size* (a count of the number of organizations lobbying together) is drawn from a Poisson distribution. *Business coalition* is binomial. In my data, business coalitions are more common than non-business coalitions, but, for simplicity, I simulate a balanced sample. I set rule pages constant at 85, the average in my data, and draw *comment lengths* (the count of words in a comment) from a Poisson distribution. While in my full dataset, less than one percent of coalitions lobbying in rulemaking organize a mass comment campaign, I will select a balanced sample for analysis, so half of the simulated observations have no mass comment campaign (*comments* = 1, *log(comments)* = 0), and the other half has a number of *comments* drawn from a Zero-Truncated Poisson distribution, which is then transformed to the log scale.



Unsurprisingly this simulation yields no significant results. With lobbying success as the dependent variable, the coefficient on the main variable of interest would be interpreted as a one-unit increase in the logged number of comments corresponding to a $\beta_{log(comments)}$ increase in my five-point influence scale.



To assess congressional support as a mediator in the influence of public pressure campaigns on rulemaking, I estimate the average conditional marginal effect (ACME, conditional on the number of comments from Members of Congress) and average direct effect (ADE) of mass comments campaigns using mediation analysis. **The key variables for this analysis–supportive comments from Members of Congress and lobbying success–require completion of the hand-coding task proposed to be aided by RAs through this proposal.**

The intellectual merit of studying environmental justice campaigns

To ground my broader theories and analysis of policy influence, I explore the impact of environmental justice campaigns in agency rulemaking, both quantitatively and qualitatively. 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 broader array of meanings, encompassing any marginalized group. In 1994 the President 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" core to their mission. This meant considering disproportionate effects during rulemaking.

I use case studies where environmental justice concerns are raised in comments to show how 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 and how rulemaking constructs a political community of "relevant" stakeholders and "appropriate" criteria to evaluate policy consequences. These cases illustrate how fundamental definitions of the public good and minority rights are implicit in agency rules. The public comment process offers an opportunity to challenge or protest these definitions. Protest and petitions are critical ways for marginalized groups to communicate opinions to government officials (Gillion, 2013, Carpenter (N.d.)). For example, in the EPA's Mercury Rules, two grievances of marginalized groups were decisive. First, mercury-emitting power plants are concentrated in low-income, often non-White communities. Second, some populations consume much more locally-caught freshwater fish, a major vector of Mercury toxicity. The standards thus depended on whom the regulation aimed to protect: the average citizen, local residents, or fishing communities. This decision had disparate effects based on race and class because of disparate effects based

on geography and cultural practices.

Tracing ideas like environmental justice through the rulemaking record offers one way to study the mechanisms by which public pressure campaigns do and 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 public pressure mattered.

Most proposed rules fail to address environmental justice. To examine whether environmental justice activists' public pressure campaigns influence the discourse around policies, I use the text of draft rules, public comments, and final rules retrieved from regulations.gov. To compare the use of the term "environmental justice" in draft policies, public comments on these drafts, and the final versions of the policies, I collect 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 add all draft and final rules from all 35 agencies that have published at least one rule addressing environmental justice, an additional 40,096 documents. I investigate the extent to which this change from the draft to final policy is related to environmental justice issues raised in public comments.

Most comments raising environmental justice concerns are part of campaigns led by national environmental groups, not front-line community groups. In addition to identifying which groups participate in rulemaking, normative evaluations of group participation depend on who these groups represent, what Seifter (2016) calls "second-order" representation. I investigate who is raising environmental justice concerns in two ways. First, I identify the top organizational commenters, including tribes, businesses, and nonprofits that are using the environmental justice frame and investigate who these groups represent. **(Completing this list of organizations that use environmental justice language is part of the proposed project.)** Second, where the commenter signed their name, I compare surnames to their racial and ethnic identity propensities in 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.

I find 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 a public pressure campaign. Not all groups who may benefit from revealing political information to policymakers can take advantage of the opportunity for mobilization that public comment periods present because they lack the resources to invest in a campaign. Smaller, more member-driven groups may be able to mobilize public pressure by joining coalitions with groups with more resources who mobilize on their behalf. **As more of these comments are coded, I will be better able to identify coalitions and thus more systematically assess this possibility.**

Most final rules fail to consider environmental justice impacts. Most rules that do not address environmental Justice concerns in the draft do not end up addressing them in the final version, even when commenters raise these issues, but some do. To test whether this is related to public comments, I estimate a logit model where the outcome is whether environmental justice was addressed in the final rule. The predictors are whether environmental justice was raised in the comments and the total number of comments received. I calculate predicted probabilities for the types of rules of interest, i.e., rules where environmental justice was not raised in the draft. 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 3: Proposed Rules Not Addressing Environmental Justice

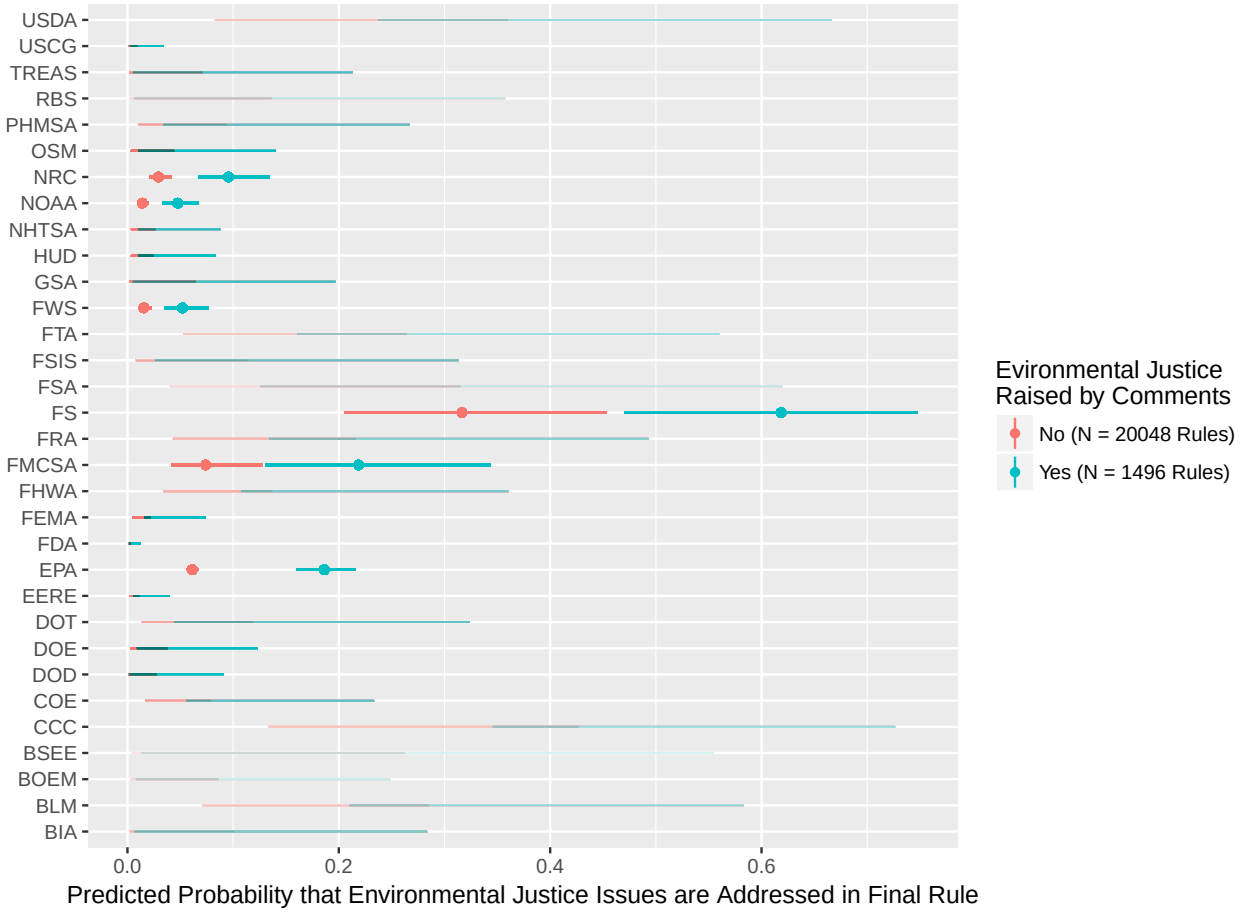


Figure 3 presents predicted probabilities with separate models for each agency. The range of predicted probabilities is systematically higher when environmental justice is raised in the comments, but with considerable variation among agencies in the magnitude and statistical significance of these estimates. Point estimates are shown for agencies where confidence intervals do not overlap. The agencies where effects are largest are exactly the agencies we would expect to be influenced by comments raising environmental justice concerns: agencies that deal with environmental issues with distributive consequences.

Agencies are more likely to add language addressing environmental justice in their final rules when public comments raise environmental justice concerns. My preliminary analysis of the impact of environmental justice claims in rulemaking illustrates the importance of ideas in policymaking. When issue frames like environmental justice are raised, there is a higher probability that policymakers consider the effects on marginalized populations. This relationship may depend on whether the institutional environment is predisposed to such claims. Furthermore, policy outcomes suggested by environmental justice analysis depend on how minority populations are defined.

The broader impacts of research and data on public participation

I focus on public comments in rulemaking, but the theories and methods here may 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)

In addition to providing scholars with the first systematic data on public engagement in rulemaking and the organizations that mobilize it, this project will generate knowledge and data to inform current policy debates, notably policies governing the solicitation and processing of public input through regulations.gov. Because state rulemaking processes are modeled on the federal process, procedural reforms to deal with pressure campaigns at the federal level are likely to diffuse to state and local policymaking.

Empirical research is needed to inform planned reforms to public comment processes. The Government Services Agency, which manages regulations.gov, is reforming its U.S. federal government's public comment processes. I participated in stakeholder meetings in July and April of 2020 and submitted formal comments based on my research on June 5th. **Through my participation in this and related efforts to reform participatory processes, the analysis enabled by my proposed project will directly inform public policy.**

These reforms stem, in part from a 2018 report from the Administrative Conference of the United States (ACUS) that identified mass commenting as a top issue in administrative law. In their report to ACUS, 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. Mass 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." Mass comment campaigns are known to drive significant participation of ordinary people in Environmental Protection Agency rulemaking (Judge-Lord, 2019; Potter, 2017*a*; Balla et al., 2018). Cuéllar (2005), argues that mass comment campaigns signal "demand among the mass public for a seat at the table in the regulatory process." Public demand for opportunities for a voice in policymaking calls upon government reformers to remove barriers for public participation and calls on scholars to produce research that informs those choices.

The broader impacts of paid research experience

Unpaid prestige experiences are a significant driver of inequality. Unpaid undergraduate research assistantships track some students toward academic careers and raise barriers for others. This affects low-income students and students who lack social networks in elite professions like academia, both groups who are disproportionately first-generation and non-White.

Coming from a low-income household and an underfunded rural school, the academic rigor of Reed College was exciting. I aspired to be a professor but was quickly convinced that academia was not an option for me. Working multiple jobs meant that I did not have time for research beyond my coursework. One semester, I was $750 short of my tuition and may have dropped out if I had not received an advance on several paychecks. Compared to my classmates whom I perceived as being on a graduate-school track, I saw myself as underprepared and stretched too thin. In the summers, I worked in foodservice and landscaping while many of my wealthier classmates built their résumés by collaborating with faculty on research.

Receiving a fellowship to work on a research project the summer after my junior year changed my career trajectory. I received mentorship, learned research skills, and discovered the Master's program that I would later attend. This experience led to my first academic conference presentation and put me on the path to an academic career.

A principal aim of my proposed project is to give other students a similar opportunity by providing paid research assistantships to undergraduate students interested in data science and political science. I have invested nearly all of the grant funding that I have received for my dissertation research to hire undergraduate RAs. I also hire undergraduate RAs whenever possible in my collaborative projects with faculty. I typically have over 30 applicants for each RA position, allowing me to hire exceptional students from demographics that are underrepresented in political science and data science. Additionally, during a pandemic and economic crisis, it is imperative to support students and bolster the academic pipeline in order to avoid increasing racial and wealth disparities in academia.

The broader impacts of mentoring

This project would provide substantial research experience and mentoring for two to four undergraduates at the University of Wisconsin-Madison. With a large student body, demand for political science research experience far exceeds what we can supply with current resources.

Each year of my Ph.D., I have mentored two students through the Undergraduate Research Program, a program for first-year students from underrepresented backgrounds to get class credit for working on research projects. I also helped several seniors develop independent studies and honors theses, providing data and code from my research projects.

Mentoring is much more than supervising. I have helped four Undergraduate Research Scholars submit successful applications to present at academic conferences. I have also helped mentees change their major, deal with racism and harassment, and become a Rhodes Scholar finalist. Whenever possible, I encourage more experienced research assistants to develop leadership skills by training newer team members.

For four years, I have facilitated weekly meetings with a team of undergraduate col-

laborators. In these meetings, we discuss the challenges we've faced in our research tasks and collaborate on solutions. These meetings have become an important space for sharing resources and strategies that students may not have learned about otherwise. In the summers of 2018 and 2019, I led teams of four or more researchers on hand-coding and programming tasks. I chose to meet in person 9-5 every day because it made training and mentoring easier and more impactful. I now hold virtual team meetings several times a week. I spend many hours screen sharing as I teach RAs skills like using remote servers for computational research tasks that cannot be done on a laptop.

Collectively, RAs working with me have edited over a million spreadsheet cells and written thousands of lines of computer code. For example, one of my GitHub repositories has 12 collaborators, 6 of whom are undergraduates who have each contributed more than 1,000 lines of code. In addition to the coding and data science skills that I teach, I work with the Data Carpentry community and Social Science Computing Cooperative to provide additional software training to address RAs' and mentees needs and broader interests.

This project is an excellent mentoring opportunity. Because RAs will be working on the same tasks as current and past RAs on this project, the workflow will be clear, despite the likely need to collaborate online. Because RAs will be joining a project where the core empirical question–does public pressure affect policy?–remains unanswered, their work will clearly and directly contribute to answering an empirical research question during their RA-ship. This transforms a job into a rewarding experience that reveals the impact of research. Each observation—an individual, organization, or elected official advocating for a position on a proposed policy—is an interesting example of politics. I always ask RAs to discuss things they found interesting in order to emphasize their value and growing expertise. The collective results of our effort will be the first systematic study of its kind.

RAs will learn multiple research skills. These skills include applying a codebook to semi-structured text data, writing code in R to analyze text, and contributing to a collaborative and reproducible research project. These research skills will be essential for thier job, and they will thus learn by doing research.

Because junior students are not eligible to get class credit through the Undergraduate Research Scholars program or an Honors Thesis, I will prioritize juniors from underrepresented backgrounds in hiring RAs. This is a critical time for students who may consider applying for graduate school or careers in research. As applicable, I will encourage RAs to apply for programs like Ralfe Bunche and the APSA Minority Fellowship Program.

Timeline

If funded, I will immediately solicit applications for 2020-2021 academic-year undergraduate RAs through political science listservs and by asking instructors to circulate the job posting. Because my data collection is complete, and the major remaining task is the hand-coding that would be funded by this project, the main analysis for chapters 2 and 3 would be complete by the end of 2021. (I have already presented chapters 1 and 4 at conferences, but both will be stronger with the additional data that would be coded through this project.) I will defend the complete dissertation in early 2022.

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