

Echoes Without Resonance: The Elusive Impact of Interest Groups on Legislative Conduct

Austin Waterhouse, Political Science – Data Analytics, BS

University of California, San Diego – Political Science Department

Senior Thesis



Introduction

For decades, public opinion on lobbying has been very negative. In a recent poll, 73% of Americans believe lobbyists have too much power (Pew Research Center, 2023). Despite the near-universal concern about wealthy interest groups among the public, interest group researchers are more divided in their perception of resource advantages among interest groups. This complexity is further underscored by the multitude of potential factors influencing congress members' legislative behavior that researchers have examined, including campaign contributions, connections, lobbyist expertise, interest group resources, and more. Yet, only small steps have been made to answer the question of influence among this breadth of potential factors explored. For example, while some studies have found correlations between campaign financing and resources as influencing Congress, just as many have found no connection at all (De Figueiredo, 2014). Moreover, while a significant portion of the literature has concluded that wealthy interests have outsized influence on Congress (e.g., Gilens and Page, 2014), the methods and degree in which this influence is gained are unsettled (Clarke and Primo, 2012). This intricate web of factors and their interactions is what makes the study of interest group dynamics so fascinating and challenging.

Does public opinion sway the United States government, or are policies being shaped by powerful entities behind the scenes (Rasmussen et al., 2018)? Previous literature suggests that the answer may be “yes” to both questions. While the wealthy may have a significant baseline advantage, sufficient public outcry can lead to policy changes that benefit the public (Kollman, 1998: 59, 155). Many researchers, particularly those focusing on economic topics, have found that when the public is sufficiently aware of economic issues, the wealthy's resource advantage

can be diminished (e.g., Klüver, 2011; Stevens, 2020; Wolton, 2021). Given the prevalence of this narrative, can we expect similar outcomes across different policy topics? This is the central question that this research seeks to answer.

Does the public salience of a policy topic affect wealthy interest groups' influence in Congress? I hypothesize that it does and that resource advantages will decrease as public issue salience increases.

Conversely, resource-disadvantaged interest groups will see their interests represented in policy when issue salience is high and aligned with their interests. My analysis focuses on the content of legislators' speeches as an indicator of interest group influence.

This hypothesis is based on a few factors. First, wealthier, business-oriented groups are more likely to use inside lobbying efforts and have a comparative advantage over less-resourced groups due to the high costs (Baroni et al. 2014). This means that wealthy interests can manipulate the agenda without an intervening force wholly hidden from the public's view. However, because wealthy interests often oppose public opinion, less wealthy groups have an advantage in building personnel when the public is paying attention and issue salience is high (Klüver, 2011). In other words, as issue salience increases, the wealthy groups can no longer contain their topic from the public and gradually lose control over policy direction. Therefore, the influence of wealthy groups diminishes as issue salience increases.

Whether the US government represents the public or the wealthy is more than a philosophical question. The answer to my research question has implications for the health of United States democracy, including concerns about our government's equity and fairness. In recent years, skepticism and disengagement from the political process have steadily increased as

citizens have felt they can no longer influence the electoral process (Parvin, 2018). Understanding the mechanisms of influence within our government is necessary for implementing effective solutions.

To answer how interest group resources and public opinion influence legislators' behavior, this project will assess lobbying efforts across several policy topics in Congress from 1995 through 2014. The topics I have selected are Environment, Business, Health, Finance and Real Estate, Defense, and Labor.

Within this paper, I use the popular Comparative Agendas dataset from Jones et al. (2023), publicly available campaign finance records from the Federal Elections Commission (FEC) as compiled by the Center for Responsible Politics, "CRP" on *Opensecrets.com*, and the congressional record as compiled by Gentzkow et al. (2018).

As with most research on interest group influence (and many social science topics), this thesis suffers from data generation issues and the inability to prove a causal relationship. Empirical analysis of lobbying influence is complicated as direct, indirect, and counter lobbying all impact policy outcomes, and it is difficult to account for all of these at once (Dur, 2008). Additionally, many variables of interest are often opaque to measurement, and research suffers from omitted variable problems. For example, meetings between legislators and lobbyists are not required to be reported. The literature is divided on the best practices to overcome these data and measurement issues. Many studies have used survey data to fill the gaps not covered by disclosure laws (e.g., Baumgartner et al. 2009). However, lobbying survey data can also suffer from nonrandom nonresponse rates, limited ability to verify the validity of answers, and other issues (Groves et al. 2009).

Transaction reports, such as campaign contributions and lobbying expenditures, have been widespread since the Lobbying Disclosure Act 1995 (Richter et al. 2009; Bertrand et al. 2012). The advantage of this method is that it allows for extensive N studies and measurements of magnitude from lobbying firms. However, these do not show the message's content or the targets of the lobbying efforts (De Figueiredo, 2014). To best use this data, integrating transaction reports with other datasets, such as bill proposals or corporate tax payments, is the most fruitful way to gain value from transactional datasets (De Figueiredo, 2014).

In light of the suggestions, I am using a dataset of campaign contributions and a topic model of congressional speeches. The reason for using speeches is that they may be more expressive of the legislator's will than roll call votes (Witko et al. 2021). Members are not likely to vote against a party without strong reasons (Kingdon 1981, 47). However, members have much greater leeway in choosing topics to highlight on the floor (Witko et al. 2021: chap. 4). I use campaign financing data as the primary measure of interest group resources. These donations are a rough proxy of the resources interest groups spend on influencing policy. The advantage of this approach is that it allows for a large-N analysis. In order to account for omitted variables, I am using a panel model with fixed effects for both members and terms.

Ultimately, I have found no link between interest group activity, issue salience, or legislator activity. However, a potential limitation of this study is that I have not been able to account for donors' policy preferences or speeches' sentiments.

Literature Review

From the beginning of the American government, the importance of political groups and their ability to clash with the ideals of democracy has been a topic of great interest to writers. For example, James Madison wrote in *Federalist 10* about what he called “factions,” which he defined as “A number of citizens, whether amounting to a majority or a minority of the whole, who are united and actuated by some common impulse of passion, or of interest, adverse to the rights of other citizens, or the permanent and aggregate interests of the community” (Madison, 1787). Unlike groups looking to hold office (i.e., political parties), Madison’s definition aligns closely with our modern conception of interest groups (Beyers, 2008). Madison was primarily concerned with the adverse effects of self-interested groups on the health of democracy, describing their influences as bringing “instability, injustice, and confusion introduced into the public councils,” something that a well-constructed union must be designed to “break and control,” but cannot eliminate (Madison, 1787).

Much of recent research has looked into how bias manifests in political representation, with some groups receiving better representation than others. This disparity in representation is best conveyed by the famous quote, “The flaw in the pluralist heaven is that the heavenly chorus sings with a strong upper-class accent.” (Schattschneider 1960, 34–35). With the rise of more sophisticated statistical models and access to information with the 1995 Lobbying Disclosure Act, researchers have found vast support for the idea that economically powerful interest groups tend to hold disproportionate benefits in policymaking. For example, Gilens and Page (2014) find that while business interests, which have more significant economic resources and more

significant lobbying presence, may have “substantial [influence] on U.S. government policy,” citizen groups often “have little or no [influence],” (Gilens and Page, 2014).

The overrepresentation of wealthier interest groups seems to be a consistent finding. Corporations and trade associations comprise the majority of lobbying expenditures, with more than 84% of the expenditures at the federal level, despite only being 54% of the total interest group population (de Figueiredo, 2004; Baumgartner et al., 2009). In addition, groups with backing from more giant corporations are more likely to lobby (Richter et al., 2009; Hill et al., 2013) and more likely to lobby independently (Richter et al., 2009; Kerr et al., 2014). Thus, evidence of resource disparities in lobbying confirms Madison’s concerns about the tyranny of factions.

Despite evidence of bias for wealthy interest groups, *how* and *to what extent* lobbyists influence government has plagued group researchers from the beginning. The answer to this has been called “the Holy Grail of interest group studies” (Leech, 2010: p. 534). This is due to a lack of data and difficulty in conducting randomized experiments. De Figueiredo (2014) states, “Even though lobbying theories are often about information, in most datasets, the information (or message) is generally not directly observable” (170). As a result, there are both difficulties in empirically analyzing the influence of interest groups and, in turn, little consensus on what determines policy success. For example, literature reviews of the impact of lobbying and social movements on policy concluded that the variables most examined by researchers, such as macroeconomic indicators and constituent demographics, often have little or no effect on policy (Burstein 2020). However, this discrepancy may be explained by Wolton’s (2021) proposed model of influence, which suggests measures of inside lobbying, activities that are directly aimed at influencing decision-makers, may underrepresent the influence of interest groups. In the Nash

Equilibrium of this model, inside lobbying is associated with compromise, underrepresenting pro-change interest groups. This underrepresentation can be explained by inside lobbying expenditures not correlating with outside expenditures, which means measures of inside lobbying are unable to account for these tactics. (Wolton, 2021).

Despite these complications, I use inside lobbying expenditures in this paper, as they allow me to gather significantly greater amounts of data. Until more expansive datasets are developed for outside lobbying measures, researchers wishing to use large-N models will continue to use inside lobbying measurements despite their potential underestimation of influence. Dür (2008) faced this dilemma, suggesting that researchers ought to “consciously focus on specific aspects of [interest group influence], therefore making it amenable to empirical research” (13). Researchers have found several advancements in the literature using this practical approach.

This leads to another theory of interest group influence, the quid pro quo perspective, in which lobbyists give something, whether monetary or other favors, in exchange for policy (Grossman and Helpman, 1994). In one of the few studies of its kind, Kang (2016) examined lobbying returns within the energy sector and argued that while the probability of changing policy is small due to status quo bias, the return on investment to lobbying may be high (from 130% to 160%) due to how valuable a single policy may be to businesses. Bombardini (2020) argues that these findings indicate that there may be diminishing returns to further lobbying investment once a certain activity threshold is seen, explaining the relatively small investment into lobbying by organizations compared to total revenue.

Campaign contributions as a form of influence have mixed results in describing effectiveness. While some studies have found positive correlations in effectiveness in specific

and limited circumstances (Gordon, 2005), others have found insignificant or adverse effects (Austen-Smith 1995; Baumgartner et al. 2009). However, these studies have focused on roll call votes as a measure of influence, which has been suggested to lead to methodological concerns (Kingdon, 1981). One lens through which to view the issue is through the decision-makers who give donations. Since companies are primarily motivated by profit, their continued investment in politics suggests that a benefit is provided to these companies (Powell, 2013). A survey of Business PAC executives found that most expected positive returns from their PAC investments (Gupta and Swenson, 2003). This may indicate a connection that empirical results have not been uncovered due to the aforementioned empirical problems.

For political scientists, informational theories are much more prominent, where interest groups impose influence through asymmetrical information or expertise (Austen-Smith, 1995). One step in answering the question of influence is analyzing the targets of lobbying efforts. Numerous studies have found that lobbyists typically target political allies or marginal legislators but often avoid attempting to convince firm opposition (e.g., Baumgartner and Jones, 1993; Hall Wayman, 1990; Hojnacki and Kimball, 1998; Holyoke et al., 2009; Kingdon, 1989; Milbrath, 1963). These results suggest that lobbyists impose influence by providing information to their allies to increase their legislative effectiveness and that greater resources increase capacity for providing this information (Austen-Smith, 1995; Gerber, 1999; Hall and Deardorff, 2006).

Despite its flaws, campaign contributions may still be helpful in measurement. PAC contributions are highly correlated with lobbying, with 86% of PACs making that with a lobbying presence (Ansolabehere et al. 2002). In addition, campaign contributions have been found to significantly increase the likelihood that the targeted politician will be involved in bills relevant to the lobbying firm (Kim et al., 2023).

The distinction between “who you know” and “what you know” also remains up for debate (De Figueredo, 2014). Vidal et al. (2012) find a 23% decrease in lobbyist revenue after a legislator that a lobbyist previously worked for leaves office, suggesting connections matter for influence. Cameron (2013) finds empirical support for an influence model based on expertise. Further, Bertrand et al. (2012) supports both theories, first finding that lobbyists specialized in a particular issue are more likely to access politicians of opposite parties due to politicians valuing their input. Second, lobbyists “follow” legislators they have connections with, even if the legislator changes committees or issue areas, suggesting a correlation for “whom you know” (Bertrand et al. 2012). As there is support for both arguments, the most likely explanation is that an individual’s lobbying effectiveness is a function of both connections and expertise. However, the magnitude of each effect is yet to be determined (Bombardini 2020).

One of the primary explanations for what makes certain interest groups more influential than others is resources. Resources enhance the influence of interest groups by expanding their ability to provide information (Bouwen, 2002; Dür, 2008; Eising, 2007; Gerber, 1999; Hall and Deardorff, 2006). An early survey by Schlozman (1984) gives insight into the resource disparity across groups. When interest group representatives were surveyed about their group’s greatest frustrations in influencing policy, a mere 5 percent of corporate and 11 percent of trade organizations listed financial resources; however, a staggering 47 percent of public interest group representatives did the same (Schlozman, 1984). This suggests that structural factors may either hinder or facilitate a group’s functions, depending on their purpose and origin.

However, resource disparities are not universally found to be determinants of policy influence. Gerber (1999) argues that less monetarily advantaged groups may have other means of gaining influence. While economic interests hold an advantage in amassing monetary resources,

citizen groups may have a comparative advantage in mobilizing personnel resources (Gerber, 1999). Economic groups typically use their greater monetary resources to lobby inside. In contrast, citizen groups may prefer deploying their greater member support to outside lobbying, i.e., activities that aim at mobilizing or changing public opinion (Dür 2013). Ultimately, while Dür (2013) finds a slight correlation between interest group resources and their influence strategies based on their type, she notes that lobbying strategies vary significantly even within a single group type (Dür 2013, 678). Therefore, studying inside lobbying methods among non-economic groups remains essential to understanding interest group influence, especially given their disparate resources (Baumgartner et al., 2009; Binderkrantz et al., 2015; Gerber, 1999; Hall and Deardorff, 2006; Kohler-Koch, 1994).

Nevertheless, Baumgartner and colleagues (2009) find that it is not the resources of a specific interest group but rather the aggregated resources of each side that ultimately matter. In addition, for the majority of issues, each side of a conflict can amass a comparable amount of resources, which leads to both a relatively stable policymaking process and complicates the resource advantage in policy outcomes from wealthier groups, as their advantages may be canceled out in equilibrium (Baumgartner et al., 2009).

Perhaps it is not monetary resources but access to policymakers where interest groups gain advantages (Pfeffer and Salancik, 1978). Economic groups are consistently granted greater access to legislators than other groups, indicating a systemic ideological preference toward these groups (Weiler et al., 2018). In a multi-year randomized study, Baumgartner and colleagues (2009) find that businesses, trade associations, and professional organizations have more allies in higher government positions. One theory for this inequity is due to structural barriers to entry. These barriers are theorized to be due to some combination of institutional rules and the

ideological beliefs of legislators (Dür, 2013; Binderkrantz, 2016). A case study in the E.U. found that even after public interest NGOs gained considerable access to policymakers, they do not receive the policy influence one might expect (Dür, 2007). This also suggests bias may be more deeply entrenched than simply a matter of access.

Economic elites hold innate structural power in policymaking because policymakers perceive that they are vital to the economy's performance (Witko et al., 2021). As a result, less effort is needed for these wealthier groups to make political advances. Furthermore, while citizen groups can play a role in the policymaking process, they must first overcome collective action problems, leading to their lack of monetary resources. For less advantaged groups, resources are necessary but not sufficient in that these groups must also overcome structural barriers for their voices to be heard (Witko et al., 2021). There is a very high barrier of entry for creating a lobbying firm, such as recruiting personnel and building connections, that incentivizes sustained influence (Kerr et al. 2014). Businesses almost always need lobbying and expect to find positive returns, leading to the sustained investment necessary for influence (Kang, 2016). However, public interests do not have these same incentive structures, leaving them vulnerable to the collective action problem.

The relationship between interest group resources and lobbying influence may be contingent on the salience of the topic in question (Klüver, 2011; Mahoney, 2007; Stevens and Bruycker, 2020). For starters, the amount of lobbying deployed to Congress increases with the importance of that topic to interest groups (Baumgartner et al. 2011). Similarly, outside lobbying tactics, such as grassroots mobilization, either directly increase a topic's salience or may help

provide lawmakers with information about that salience (Gais and Walker, 1991; Kollman, 1998). Further, many studies have found that the benefit of economic resources on lobbying effectiveness is contingent on the salience among the public of the topic (Schattschneider, 1960; Beyers, 2008; Dür and De Bièvre, 2007b; McKay 2011; Klüver, 2011; Mahoney, 2007; Stevens and Bruycker, 2020). The preferences of wealthy groups are less likely to align with public interest. As a result, attempts by wealthy interest groups to limit the public's involvement or influence policymaking decline when the topic's salience is greater among the public (McKay, 2011).

While resource-rich groups may have a baseline advantage, this disadvantage may be offset through sufficient public outcry (Schattschneider 1960). Groups with interests contrary to the public may have greater influence if the public is unaware of their efforts to promote their self-interests (Baumgartner et al. 2009, 192). In other words, "The outcome of every conflict is determined by the extent to which the audience becomes involved" (Schattschneider 1960: 2).

The "collective action problem" is a particular issue for many publicly oriented interest groups (Olson, 1965; Baumgartner and Leech, 1998; Schlozman et al., 2012). Public goods are provided to everyone whether or not an individual assists in their implementation. Additionally, these public goods are typically very costly and provide only minor benefits to individuals. Therefore, rational actors are incentivized to "free ride" and let others bear the costs, which dampens individual incentives to contribute (Olson, 1965). However, only those with a vested interest receive the benefit for private goods, meaning the payout is divided among fewer people and a higher individual benefit. Additionally, if those with interest do not contribute to a private good, their absence is more impactful, as this

burden is divided among fewer individuals. This leads to a clear and direct incentive structure that is not present with public goods. Therefore, the collective action problem naturally over-represents wealthy interests (Olson, 1965).

While Baumgartner et al. (2009) do not find empirical evidence for resources as a cause for Policy success, they still argue that the wealthy are advantaged, as they tend to benefit from the status quo. Most legislation passed provides little change and is “incremental” (Baumgartner et al. 2009). In other words, the current policy will generally remain the status quo because of the structure of the US political system (e.g., separation of powers and federalism). Nevertheless, Baumgartner et al. (2009) note, “To the extent that their advantages are already reflected in the status quo and that the status quo typically is not changed, undoubtedly the privileged are advantaged” (241). Witko et al. (2021) empirically confirm this assertion and assert that wealthy groups exert influence by keeping policies they disagree with off the agenda entirely. In this way, the wealthy maintain their power by ensuring that the policy they disagree with is kept off of the agenda and, therefore, never brought to a vote in the first place.

Once again, controlling issue salience is the key to maintaining wealthy interest’s control of the Policy agenda. If the general public is apathetic towards an issue, legislators will listen to those willing to give them information—the wealthy special interests in the field. However, with enough public outcry, legislators no longer have to turn to these special interests, as they can hear directly from their constituents.

In sum, extant literature suggests that legislators inherently prefer the opinions of wealthy groups, seeing business interest groups as experts whose opinions are more relevant to promoting the US economy (Witko et al. 2021). Wealthy interests typically receive more access to

legislators, and citizen groups do not benefit as much when they do receive access (Baumgartner et al., 2009; Weiler et al., 2009). Collective action problems also favor business interests and mean that less wealthy groups have an even more difficult time raising funds and other resources than wealthier groups (Olson, 1965).

While fundraising typically balances out contentious issues, legislators default to the status quo when the topic is contentious, which still benefits wealthy interests (Baumgartner et al., 2009; Witko et al., 2021). Altogether, this makes it more difficult for less wealthy groups to exert their influence on policy change.

While there is inconclusive evidence for the effectiveness of tactics such as campaign contributions directly, the high correlation between campaign contributions and lobbying activity means that it still serves as a helpful proxy for the amount of effort put into lobbying by interest groups (De Figueiredo, 2014). While not every group has the means of donating, doing so indicates a predisposition for lobbying internally and is likely to be a valid proxy measure for inside lobbying efforts.

Researchers facing the lack of evidence linking lobbying to policy influence have argued that either lobbying has little or no influence or that the mechanisms of influence are unmeasurable (Fisher et al. 2015, 154). However, the continued investment of businesses into lobbying (which typically acts to maximize their profits) and the reported expectations of positive returns may suggest that lobbying has effects that researchers have not yet been able to measure (Bombardini, 2020; Wolton, 2021).

Theory

Legislators' speech as a measurement of influence is an ideal way to uncover the influence of resources and issue salience on legislative behavior. Legislators have limited time and opportunities to speak on the floor of Congress. Ultimately, each time a member stands up to speak about one topic, they are not discussing another. This means that the topics legislators choose to speak about signal the priorities of an individual legislator (Witko et al., 2021). Therefore, a measure of this speech will be preferable to roll call votes, which do not have enough variation for meaningful results (Kingdon, 1981).

This is because legislators in U.S. politics rarely diverge from party lines in their voting, creating methodological problems for using roll call votes as a dependent variable.

In order to lobby effectively, concentrated, sustained efforts are required to build the proper relationships and trust of legislators. However, hiring lobbyists is expensive, and public interest attempts at fundraising face difficulty overcoming the free rider dilemma (Olson, 1965). This means that interest groups with the highest lobbying presence are inevitably special, often wealthy business interests. In addition, legislators are often pre-disposed towards policy opinions similar to the status quo, which upholds the wealthy's power (Witko et al., 2021; Baumgartner et al., 2009). When legislators exclusively hear from business interests when debating a policy issue, members will inevitably be biased toward that viewpoint.

Hypothesis 1: *Groups with more resources will likely increase legislators' attention to their policy issues.*

The public's perceptions of lobbying and interest groups may also influence how much attention legislators pay to interest groups' priority issues. It has been debated among interest group studies whether salience enhances lobbying efforts or arises due to lobbying activity (Kollman, 1998; Mahoney, 2007). As with my analysis of resources, I argue that the effects of lobbying within the environmental field will be similar (if not to the same degree) as seen among other policy topics.

Hypothesis 2: Higher salience on a topic will lead to more discussion on interest groups' issues.

Suppose we assume that legislators are swayed by lobbying. In that case, I expect that the amount of resources that lobbying interest groups have will positively correlate with the degree of influence they can achieve. However, when issue salience is high, I expect that high-resource interest groups are less influential. Additionally, other research suggests that there may be an interaction between a group's resources and salience (Klüver, 2011). Higher-resourced groups tend to do worse as salience increases, and lower-resourced groups do better. This is because business interests are more likely to hold positions contrary to public opinion (Willems and De Bruycker, 2019). Therefore:

Hypothesis 3: As public salience increases, congress members' speeches will be less likely to discuss topics relevant to high-resource interest groups.

Data

For my analysis, I have compiled three different datasets. To measure the influence of interest groups, I have used the keyATM package to create a topic model of congressional speeches from 1995 through 2014. The speeches came from Gentzkow and colleagues' (2018) dataset, which maps the raw text of the congressional record to their respective congress members until the 114th Congress. To measure interest group resources, I have found the sum of political action committee (PAC) donations given to each congress member within each trimester from opensecrets.com. These sums were then aggregated by the PAC industry as coded by Opensecrets.com. Lastly, issue salience is captured by responses to Gallup's "Most Important Problem" surveys, which The Comparative Agendas Projects has mapped to their standardized topic codebook and aggregated yearly (Baumgartner et al. 2019).

Dependent Variable:

To create my dependent variable, I use the congressional record mapped to each speech from the congressional record to its respective members in a tabular format (Gentzkow et al. 2018). While this dataset spans from the early 1900s until 2014, I focus on speeches after 1995 due to *The Lobbying Disclosure Act of 1995*. This act has dramatically increased the reliability of lobbying data, as before its implementation, reporting was voluntary and used "most likely as a way to promote [lobbying firms'] business" (LaPira and Thomas 2020, 258).

The congressional record is formatted into blocks of uninterrupted speaking by members, which serve as the primary unit of observation, which was subsequently summarized by trimester for my unit of analysis. I started by tokenizing the speeches (the process of breaking the text into

individual words) using the “Quanteda” R package (Benoit et al. 2018). I followed this with standard text preprocessing: converting tokens to lowercase, word stemming (e.g., removing “-ing” and “-ed” from the end of words), and removing stop words (low-information words such as “the,” “and,” or “a”). Next, I convert these individual words into “bigrams,” which are groupings of two adjacent words in a sentence. Bigrams are often preferable to singular word tokens (unigrams) in text analysis, as they have been found to maintain better the “semantic relations between words” (Bekkerman and Allan 2003). In Bekkerman and Allan’s example, “Bill Gates” in a unigram representation would be separated into “bill” and “gates,” which eliminates the words’ original relation to each other in computer software. After creating the bigrams, I filtered out additional stop words identified as procedural terms by the Gentzkow et al. (2018) dataset. Then, I filtered features to include only the 10,000 most frequent bigrams, as recommended by keyATM authors (Eshima et al. 2024). Lastly, any speeches without bigrams following the filtering above were removed.

This preprocessing leaves about 600,000 speeches remaining in the dataset. Due to the size, an automated way to classify these speeches is necessary. While there exist many methods, I decided on a modified Latent Dirichlet Allocation (LDA) as implemented in the “keyATM” package in R (Eshima et al. 2024). The advantage of this package over traditional LDA is the ability to supply keywords and topic labels before running the model. This is especially useful for my purposes, as I have a finite and identifiable number of policy topics of interest. In order to create topic labels and assigned keywords, I started with mappings identified by the Gentzkow et al. dataset (2018) and added some of my own based on terms relevant to a handful of PAC sectors. Some topics did not contain keywords common enough to occur in the preprocessed set

of filtered keywords and were, therefore, dropped. In total, twenty-six keyword-supplied topics remained.

The KeyATM package additionally allows for the researcher to add “no-keyword” topics, which function just like traditional LDA topics for additional topic exploration beyond the supplied keywords (Eshima et al., 2023: 3). However, the researcher must also determine the number of these no-keyword topics, K , to include in a model. However, different values for K will change the results of the model. In order to determine the optimal value, I ran the model repeatedly with values of K ranging from zero to ten. To analyze the goodness of fit for each model, I used two measures: UMass coherence and exclusivity. UMass coherence captures the co-occurrence of phrases within a topic, measuring the interpretability and semantic relationship of a topic (Mimno et al. 2011). The second measure, exclusivity, quantifies how distinct each topic is from the others; greater uniqueness signifies more substantive topics (Bischof and Airoidi, 2012). From both measures, a K value of four ranked highest, resulting in a collective total of thirty topics.

I partitioned the speech data into training and testing sets to train the model, randomly allocating 70% of the speeches to the training set. I set the algorithm to iterate until no further improvements in loglikelihood occurred within two iterations. After training, I predicted the topics of speeches in the test split. These test predictions constituted the sole values used in my data analysis. The decision to separate training and testing data arises from an identification issue known as the Fundamental Problem of Causal Inference with Latent Variables (FPCILV) (Egami et al. 2022).

To understand this problem, imagine a topic modeling algorithm creating a codebook mapping phrases to categories with a certain probability. The “codebook” categorizes documents

by finding the probability that each term is contained within a topic. However, due to the nature of this algorithm, assigned probabilities change based on randomly generated starting positions. Since this model employs a probability scale (ranging from zero to one) for topic categorization, adjusting the weight of a single term within a category inherently impacts the weights assigned to other terms in that category. Consequently, the assumption of independence is compromised when the same documents used to identify categories within a dataset are subsequently employed for causal inference. However, Egami et al. (2022) argue that the FPCILV can be eliminated by having a test-train split in the data, where the model is trained exclusively on the training set, never “seeing” the testing set until it is time for analysis. This ensures that the assumptions of causal inference are not violated, as the codebook made to categorize the test data is not dependent on what appears in this test data (Egami et al., 2022).

After training the model, I selected six keyword-assigned topics for my analysis: Environment, Business, Health, Finance and Real Estate, Defense, and Labor. I used two criteria to select the six topics. First, I assessed the accuracy of each topic label. This was done by reading the top documents, a random selection of twenty documents most likely associated with each topic, and the most predictive bigrams in each topic. Based on my analysis, each topic of interest except Energy was modeled with sufficient accuracy for this study. However, the topic labeled initially as Business ultimately aligned quite accurately with the Energy topic. I attribute this to the inclusion of initial keywords such as "natural gas," "oil companies," and "oil and gas," each of which ranked in the top ten most predictive terms for the topic in the final model. Henceforth, I will now refer to this topic as Energy.

Now equipped with categories for each of the speeches in the test set, I mapped the topics to PAC industry categories, as assigned by *Opensecrets.com*, and to *The Comparative Agendas*

Project topic labels (see Table A for my selected category mappings). From this, I constructed the dependent variable by calculating the proportion of speeches on each topic relative to the total number of speeches given within a quarter, aiming to obtain a normalized measure of the frequency of members' discussion on each topic.

It is important to note that this data does not differentiate between negative or positive discourse on a given topic. However, the inability to discern the sentiment of the speeches does not negatively affect the validity of my findings, as my research question assesses influence, not necessarily *successful* influence, as influence can manifest in various forms, regardless of the sentiment expressed in speeches. Still, this likely means that my analysis *underestimates* the actual influence of interest groups, as previous research has concluded that positive and negative lobbying efforts tend to offset one another (Baumgartner et al., 2009).

Table A – Mapping between Topic Categories

<i>PAC Industry (CRP)</i>	<i>Comparative Agendas Project “Major topic”</i>	<i>LDA Topic</i>
Environmental Policy	Environment	Environment
Energy & Natural Resources	Energy	Business
Health	Health	Health
Finance, Insurance, & Real Estate	Banking, Finance, and Domestic Commerce	Tax
Defense	Defense	Defense

Independent Variable (Donations):

I have conceptualized resources of interest groups as campaign contributions. Previous research has found a strong link between campaign contributions and lobbying activity. Not only are PAC contributions highly correlated with lobbying activity (Ansolabehere et al. 2002), but donations are associated with a significant increase in the likelihood of the targeted politician's involvement in bills relevant to the lobbying firm (Kim et al. 2023). Therefore, while I acknowledge that this measure does not capture the entirety of interest group influence, such as outside lobbying or information sharing, this measure serves the purpose of my research. Campaign contributions should, therefore, provide a reasonable metric for gauging the level of investment an interest group has made in inside lobbying efforts.

To measure campaign contributions, I used a dataset from *Opensecrets.org*, which has compiled the public lobbying filings required of the *Lobbying Disclosure Act* (1995) and assigned industry classifications to each donation based on the listed purpose in their filings. When the purpose was not supplied in a report, the organization instead lists the primary purpose of the group responsible for the donation. Furthermore, in filings where lobbyists register donations under their names (and not their lobbying firm), the dataset includes the industry and firm with which the lobbyist is affiliated (*Opensecrets.org*).

From this, my primary independent variable is the total sum of donations given in the previous trimester. I am using donations from the previous trimester because it takes some time to process donations, for the member to react to donations, and to ensure that donations were made before legislator activity, as lobbyists must only file within one month of their donation. I have included a lag in the donation filing date, ensuring that the speeches are made after the

contributions to address potential endogeneity. If donations influence legislators' speeches, then the donations should precede the legislator's activity.

Independent Variable (Issue Salience):

Lastly, issue salience is measured using a dataset from *The Comparative Agendas Project* on Gallup's Most Important Problem question. This dataset has compiled a yearly aggregate of responses from Gallup's survey and assigned them to their standardized topic codebook by hand (Baumgartner et al. 2019). Most variables in this dataset are significantly skewed towards zero. Given the vast array of topics congress members and PACs may elect to discuss or support, the likelihood of any one topic showing up will inevitably be low, leading to most of the data containing zero values. In order to account for this, I have log-transformed donations, number of speeches, and lifetime donations.

In diagnostics for the environmental speech model, I find slight collinearity between lifetime donations and the amount donated last trimester (22% correlated) and lifetime donations with the number of speeches within a trimester (28.4%). However, given the large sample size ($N = 10,488$), this should not significantly distort the results.

Methods

I have created two empirical approaches to answer my research question. In the first model, I regress a topic's speech proportion to the sum of donations made in the previous trimester. In the second model, I examine only the trimester where legislators received the largest sum of donations in their career from an industry of PACs in the previous quarter. It could be that legislators only respond to large donations. If this is the case, then this is expected to be when they will most likely change their behavior due to the donations. For the first analysis method, I am using a panel model with member and two-year term fixed effects, including control variables for their lifetime donations, chamber of Congress, gender, and total speeches made in a quarter. I use member-fixed effects to account for the differences between legislators, including their ideological viewpoints, natural charisma, personality, and other unaccountable factors. Furthermore, time-fixed effects hold constant temporal variables in legislator behavior. For example, outlier events such as natural disasters or global phenomena may lead to increased topic discussion. These two-way effects are intended to isolate the effect of donations from these unaccountable variables.

In the second method, two-way effects are impossible because there is only one unit of analysis for each member. Instead, I include members' party membership and state of origin to account for the differences between members. Some studies have found that interest group activity influences salience (Kollman, 1998). This could potentially lead to endogeneity between lobbyist activity and issue salience. However, I have conceptualized salience as an exogenous variable for this paper, as the claims of endogeneity are inconclusive, and other research has argued that salience is, in fact, exogenous (Mahoney, 2007; Klüver, 2011).

The effectiveness of interest groups also varies depending on the issue interest groups are advocating for. Klüver (2011) argues that the relative size of coalitions, issue salience, complexity, and level of conflict vary the degree of influence an interest group has in a particular policy topic. Similarly, Burstein (1991) finds that the “culture” and organization of relationships within a particular topic change the landscapes of influence. In other words, a group seeking to influence economic policy will have different pathways to influence than those influencing agricultural policy, as the critical contacts and status-quo opinions from legislators differ between topics. Therefore, as most interest group research has focused on economic policy, Binderkrantz (2014) argues that the resource advantage observed among business interests may be moderated in other policy topics.

I originally planned to do a regression discontinuity design that used the first incidence of donations as the cutoff and examined the effects on speech before and after this point. However, after examining the data, I found many problems with this approach. First, I found that most members received donations before entering the office, making a before and after comparison not possible. After filtering these out, the first donations that a member received were often the minimum possible amount to be required to file with the FCC, \$500. This is far too small to expect any measurable behavior change. If, however, I were to filter out units of observations based on the size of donations, I must pick an arbitrary point in their career instead of the first incidence, undermining the intent of the method as initially planned. This sort of filtering also led to an extremely limited dataset, with only a few hundred observations remaining out of the original millions before filtering. Therefore, I decided to drop this method of analysis for this study. That said, there is potential for this method in future research, given thorough theoretical answers to these concerns.

Results

Table 1 presents the results assessing the influence of interest group resources and salience on the proportion of speeches discussing environmental issues. In the full model (Model 4), neither donations nor issue salience show a statistically significant influence on legislators' speech. Interestingly, members who speak more often are significantly correlated (albeit to a minor magnitude) with less environmental speech, with a 1% increase in a member's speech leading to a 0.004 percentage point decrease in the proportion of speech.

Table 1 fails to support any of my hypotheses. It would appear that, for environmental policy, no efforts by interest groups influence legislators in any way, whether resourceful interest groups or the salience of the issue. Instead, the only variable correlated with legislator activity is how many speeches a member has made, which is most closely related to a measure of a legislator's position of power.

Table 2 includes the full model results for all policy topics within my analysis. In this, we find that issue salience is not significantly correlated with member speech for any topic. Similarly, PAC donations fail to reach conventional levels of statistical significance, except for the Energy topic, but only to the ($p < 0.1$) level. Continuing with energy as the outlier among these topics, it also shows strong statistical significance with senate membership and a decrease in speech about Energy. Senators have a 0.018 lower proportion of energy speech than members of the House. Once again, for each other topic (other than defense, which found no statistical significance), legislators are less likely to discuss an issue the more they speak generally. However, for Energy, legislators are *more* likely to discuss the issue as they speak more in Congress.

Table 1. PAC Donations on Environmental Speech

Previous Quarter Donations on Environmental Speech				
Within Member-and-Term Fixed Effects				
Proportion of Speeches on Environmental Topic in Quarter				
	(1)	(2)	(3)	(4)
Log+1 Last Quarter Donations	-0.0002 (0.0004)		-0.0003 (0.001)	-0.0004 (0.001)
Issue Salience (MIP)		0.741 (0.505)	0.724 (0.535)	0.767 (0.535)
Log+1 Last Quarter Donations X MIP			0.006 (0.092)	0.009 (0.092)
Chamber (Senate)				0.005 (0.011)
Log Number of Speeches				-0.004*** (0.002)
Observations	10,448	10,448	10,448	10,448
R ²	0.00003	0.0002	0.0002	0.001
Adjusted R ²	-0.058	-0.058	-0.058	-0.058
F Statistic	0.279 (df = 1; 9871) 2.154 (df = 1; 9871) 0.802 (df = 3; 9869) 2.064* (df = 5; 9867)			
Note:	*p<0.1; **p<0.05; ***p<0.01			

Table 2. PAC Donations on Congress Member Speech: All Topics

Previous Quarter Donations on Speech (Other Topics)						
Within Member-and-Term Fixed Effects. Linear, Panel Model						
Proportion of Speeches in Quarter						
	Environmental (1)	Energy (2)	Health (3)	Finance and Real estate (4)	Defense (5)	Labor (6)
Log+1 PAC Donations	-0.0004 (0.001)	0.001* (0.0003)	-0.0002 (0.001)	0.0005 (0.0004)	0.0001 (0.001)	-0.0002 (0.0004)
Issue Salience (MIP)	0.767 (0.535)	0.044 (0.069)	-0.123 (0.100)	0.041 (0.372)	0.036 (0.045)	-0.360 (1.020)
Log+1 PAC Donations X MIP	0.009 (0.092)	-0.007 (0.008)	0.0003 (0.013)	-0.017 (0.040)	0.002 (0.003)	0.015 (0.064)
Chamber (Senate)	0.005 (0.011)	-0.018*** (0.007)	-0.009 (0.008)	0.009 (0.009)	-0.017 (0.012)	-0.008 (0.007)
Log Number of Speeches	-0.004*** (0.002)	0.002** (0.001)	-0.006*** (0.001)	-0.005*** (0.001)	0.001 (0.002)	-0.003*** (0.001)
Observations	10,448	21,938	22,381	23,047	18,392	20,350
R ²	0.001	0.001	0.001	0.001	0.0003	0.0005
Adjusted R ²	-0.058	-0.041	-0.039	-0.039	-0.047	-0.042
F Statistic	2.064* (df = 5; 9867) 3.065*** (df = 5; 21062) 6.131*** (df = 5; 21500) 3.895*** (df = 5; 22157) 1.208 (df = 5; 17563) 1.770 (df = 5; 19523)					
Note:	*p<0.1; **p<0.05; ***p<0.01					

Again, these results do not support my hypotheses. However, there is minor support for the impact of lobbying resources, specifically within the energy topic. The coefficient on PAC Donations in the energy model suggests that more PAC donations increase legislators' speech on energy issues when issue salience is low. This result is supported by other studies, such as Kang (2016), which found that investments in lobbying for energy generate positive returns. Regarding the results for senators speaking less about energy, it is essential to reiterate that because I am using member-fixed effects in this model, this coefficient only measures the difference for members who have served in both the House and Senate. Therefore, in this first model, the chamber variable measures only a select group of members, as representatives rarely serve in both chambers.

Table 3 presents the environmental topic using the second method of my analysis. It examines only the trimester following the period a member received their largest cumulative donations from environmental policy PACs. In this table, the only significance found is that men speak about environmental policy at a 0.031 lower proportion to women, but only to $p < 0.1$ significance.

Table 3. Greatest Career PAC Donations on Environmental Speech

Size of Largest Donation on Environmental Speeches				
Within Term Fixed Effects				
Proportion of Speeches on Environmental Topic				
	(1)	(2)	(3)	(4)
Log Largest Donation	0.013 (0.009)		0.021 (0.029)	0.002 (0.037)
Issue Salience (MIP)		-1.274 (2.994)	4.172 (19.106)	1.225 (19.440)
Log Largest Donation X MIP			-0.673 (2.270)	-0.301 (2.308)
Log of Lifetime Donations				0.016 (0.016)
Chamber (Senate)				-0.014 (0.019)
Gender (Male)				-0.031* (0.018)
Party (Republican)				0.026 (0.016)
Log Number of Speeches				0.00000 (0.008)
Observations	306	306	306	306
R ²	0.007	0.001	0.008	0.028
Adjusted R ²	-0.030	-0.037	-0.036	-0.033
F Statistic	2.112 (df = 1; 294) 0.181 (df = 1; 294) 0.805 (df = 3; 292) 1.022 (df = 8; 287)			
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01			

Table 4. Greatest Career PAC Donations on Congress Member Speech: All Topics

	Largest Donation on Speech (Other Topics)					
	Term Fixed Effects					
	Environmental (1)	Energy (2)	Proportion of Speeches in Quarter		Defense (5)	Labor (6)
		Health (3)	Finance and Realstate (4)			
Log Largest Donation	0.021 (0.013)	-0.004 (0.015)	-0.040 (0.030)	0.006 (0.021)	0.002 (0.017)	0.021 (0.013)
Issue Salience (MIP)	5.824 (13.393)	-1.606 (2.423)	-1.341 (3.732)	6.870 (13.962)	0.211 (0.728)	5.824 (13.393)
Log Largest Donation X MIP	0.124 (1.153)	0.153 (0.242)	0.067 (0.364)	-0.746 (1.317)	0.002 (0.076)	0.124 (1.153)
Log of Lifetime Donations	-0.010 (0.008)	0.006 (0.011)	0.024** (0.011)	-0.002 (0.013)	0.005 (0.012)	-0.010 (0.008)
Chamber (Senate)	-0.004 (0.014)	-0.009 (0.016)	0.017 (0.016)	0.022 (0.019)	-0.039** (0.017)	-0.004 (0.014)
Gender (Male)	-0.019 (0.013)	0.004 (0.015)	0.018 (0.017)	0.007 (0.019)	-0.032** (0.016)	-0.019 (0.013)
Party (Republican)	0.006 (0.015)	-0.018 (0.013)	0.010 (0.013)	-0.005 (0.016)	0.012 (0.013)	0.006 (0.015)
Log Number of Speeches	-0.001 (0.006)	-0.0002 (0.007)	-0.004 (0.007)	-0.012 (0.008)	0.017** (0.007)	-0.001 (0.006)
Observations	552	563	549	563	553	552
R ²	0.016	0.006	0.018	0.006	0.030	0.016
Adjusted R ²	-0.017	-0.027	-0.015	-0.027	-0.002	-0.017
F Statistic	1.100 (df = 8; 533)	0.435 (df = 8; 544)	1.219 (df = 8; 530)	0.419 (df = 8; 544)	2.088** (df = 8; 534)	1.100 (df = 8; 533)

Note: *p<0.1; **p<0.05; ***p<0.01

Conclusion

Despite my novel approach to the age-old question of interest group influence, my paper has not been able to slay the goliath of measuring interest group influence. With only one exception, neither the amount of donations given to legislators nor issue salience affected legislators' behavior on a policy topic. However, regarding the energy topic, I observed a slight correlation between PAC donations and energy topic speech. Interestingly, the most predictive metric I examined was the number of speeches legislators made within a quarter. Future research may be interested in exploring if these results are related to the political capital of legislators, further supporting the idea of structural bias in representation.

My lack of results may be explained by previous theories, which have indicated that the resources among interest groups typically are equivalent to the opposition and cancel each other out, leading to a stable policymaking process (Baumgartner et al. 2009).

Alternatively, since the only topic I have found to be affected by PAC donations is energy, a topic predominately comprised of business interests, this indicates structural bias (Witko et al. 2021). However, the magnitude of this coefficient is slight and only significant to $p < 0.1$ and, therefore, should be taken with a grain of salt.

Next, future research should consider more aggressive filtering of bigrams. In my final topic model, I found that there were a handful of low-information bigrams that were overrepresented among multiple topics, such as “make sure,” “side [of the] aisle,” and “American People.”

Additionally, my measurements may have benefited from a standard speech length. For my units of observation, I elected to measure a legislator's speech as a block of uninterrupted speaking. This means that the lengths of speeches can vary drastically from one unit to the next. Some observations in my data may contain only a sentence or two, while others could be minutes of speaking at a time; However, both would be counted as only one speech. Instead, future research could normalize these discrepancies by imposing a word cap and putting the words past the cutoff into a new unit. I do not believe one method is inherently more valid than the other, as this depends on the researcher's view of what constitutes influence. For this paper, I imposed greater importance on sustained influence, measured by having multiple speeches on a topic. However, perhaps a different conceptualization values fewer long speeches on a topic representing more influence than multiple shorter speeches.

In sum, while my results do not support my hypotheses, they demonstrate the difficulty of influencing policy change and, particularly, the lasting elusiveness of the "Holy Grail of interest group studies": measuring the influence of lobbyist organizations.

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