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Scott D. McClurg

*Southern Illinois University*, mcclurg@siu.edu

Jeremy Philips

*Southern Illinois University Carbondale*, jeremyp@siu.edu

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# A Social Network Analysis of Interest Group Contributions and Partisan Behavior in the 2006 House of Representatives\*

Scott D. McClurg<sup>†</sup>

Jeremy Phillips<sup>‡</sup>

## Abstract

This project examines how interest groups create partisan connections among U.S. House members. Although the rise of ideologically motivated groups has been identified as a potential cause of legislative partisanship, there is very little research on how interest groups affect the nature of partisan coalitions. We consider how interest group donation strategies create connections between legislators and how the resulting networks affect the nature of lawmaking in the House. We use a combination exploratory social network analysis and traditional statistical methods to examine the contribution network and voting behavior of legislators in the 2006 House of Representatives. The results the interest groups create significant connectivity among legislators, particularly in a way that is consistent with support centralized partisan conflict. However, we find that the consequences of this relationship are complex—it sometimes supports partisan conflict and sometimes discourages it.

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<sup>†</sup>Department of Political Science, Southern Illinois University, mcclurg@siu.edu

<sup>‡</sup>Department of Political Science, Southern Illinois University, jeremyp@siu.edu

# 1 Introduction

When the Framers started writing the *Constitution* their principal concern was to design a framework that simultaneously provided majority rule and protection for minority interests. Despite their best efforts they were unable to strike a permanent balance between majority and minority interests in American government. This consequently creates demand for organizations that can help aggregate political interests in ways that allow them to pursue greater representation (Schattschneider 1960). The organizational forms that traditionally fill this role are political parties and interest groups.

Because these forms of political organization aggregate public interests in starkly different ways, they are often treated as competitive or, at least, separate entities. Yet political parties and interest groups are intertwined because they pursue their goals through the same political processes, such as lawmaking. While some recent work begun to explore the role of interest groups as partisan actors (Koger, Masket & Noel 2010, Koger, Masket & Noel 2009, Masket 2009, Grossman & Dominguez 2009, Cohen, Karol, Noel & Zaller 2008), the consequences of this on partisan behavior in the lawmaking process is as yet unclear. We therefore examine the relationship between interest groups and party behavior in the United States House of Representatives, treating it as a process in which interest groups are related to the partisan impact of legislative networks.

Studies of interest group influence in the lawmaking process often focus on how groups relate to individual legislators (Hall & Wayman 1990, Wright 1990, Wright 1989) or operate in specific policy domains (Heinz, Laumann, Nelson & Salisbury 1993, Salisbury, Heinz, Lauman & Nelson 1987). While understandable those approaches it may overlook the level of overlap between interest groups and parties as *systems* and how that affects policy making. Just as political parties organize legislators in ways that reflect their shared goals (Rohde 1991), we suggest that the goals and strategies

of interest groups organize legislators in ways that may be seen in policy making. This argument assumes that while single interest groups may not control policy making, the choices they make aggregate in a way that is related to how legislators organize themselves collectively. And it is in this way that the pressure system can create or buttress the incentives that legislators have to work as partisans.

This theoretical perspective forces us to consider how individual interest group decisions create interdependence between legislators, which we examine with the tools of *social network analysis*. We first offer a typology of interest group strategies that may be used in order to cultivate influence. We then describe how different strategies should manifest themselves in legislative networks and then potentially partisan behavior. To examine our theory we look at all contributions by all interest groups operating in five policy sectors during the 2006 midterm, the resulting legislative networks, and legislator behavior in the subsequent session of Congress. We show in the aggregate interest groups create significant connectivity among legislators, particularly in a way that is consistent with support centralized partisan conflict. However, we find that this relationship is complex—it sometimes supports partisan conflict and sometimes discourages it.

We admit that we are not in a position to make causal claims about these relationships, but submit that our findings support two important conclusions about the overlap of interest groups and political parties. First, the structure of the interest group system is related to the structure of partisan organization in the legislative process. Sometimes that relationship is consistent with interest groups protecting previous gains; at other times, it is consistent with interest groups promoting (or buttressing) competition between the parties. And while the causal direction and strength of these patterns is still open to interpretation, interest groups and parties are linked in ways that produce complicated political dynamics. Second, when we examine interest groups as network progenitors, their impact looks neither so small or so large as they often seem in the lawmaking process. To be sure, a large number of interest groups working

together to build a network of legislators behind a limited policy agenda could be very effective. But the conditions for such a scenario are rare—especially as the pressure system becomes more crowded (Berry 1989)—suggesting that minority interests do not completely override the majoritarian pressures to which parties must respond.

## 2 Interest Groups, Legislative Networks, and Partisan Behavior

By definition, interest groups are defined as having narrow policy goals. Quite frequently, those goals are best characterized as very small issues that stand outside of the public eye, such as specific exemptions from regulation or amendments in legislation designed to protect some grant. The strategic question that each group has to consider is how to best use their resources to pursue their specific goals, conditional on the decisions of other groups interested in the same public issues. These decisions then aggregate in a way that creates—or potentially support existing—common interests among different groups of legislators in ways that ultimately may influence the character of lawmaking in an issue domain. In this section, we first lay out the potential strategies that interest groups may use and then consider how those aggregate in such a way that they can affect lawmaking.

### 2.1 Interest Group Goals and Strategies

We assume that a group's motivations can be characterized by where they stand on two different dimensions. The first is the degree to which interest groups seek to *protect or change* the status quo. The concept underlying this dimension is simple enough—interest groups that are favored by current policy will use their resources to insulate that policy from attempts by competing political actors (not just interest groups) to change the law. Interest groups not in favor of the status quo may be

more concerned with changing in existing law. Note that this dimension require policy change to a zero-sum process, where one group's gain is another's loss. All we intend to imply *here* is some groups are policy-protectors, others are policy-seekers, and that this stance is reflected in choices about which legislators to target as they pursue influence in the policy process. The second dimension focuses on whether group goals are *particularistic or broad*. Here we refer to whether their policy aims as so narrow as to be of interest to only a few other groups, or whether group efforts are part of a larger political agenda. This definition separates group pursuing specific policies—something we expect all interest groups to do—from how that pursuit reflects their overarching political goals.

It is important clarify what this conceptual discussion is *not* intended to imply. First, these two dimensions are not intended to represent ideological differences between groups. We do intend them to mimic the ways that interests group their strategic options, rather than what they nature of their political agenda is For example, both Planned Parenthood and Operation Rescue are ideological interests that have a long-term interest in laws pertaining to female reproduction, though their position as policy-protectors or policy-demanders depends a great deal on which party is power. Sometimes, they are trying to hold on to previous policy gains; at other times, when the political climate is more favorable, they may try to change the laws to better suit their interests. Likewise, some peak associations may have a larger political agenda to promote an industry, while individual corporate interests might only care about specific provisions in the law and only be sporadically involved in politics.

Second, these conceptual distinctions are intended to be heuristics rather than hard and fast rules about how to classify interest groups. We offer this addendum because we will use this framework to think about aggregation in the pressure system that reflect strategic tendencies of groups with different goals. It is not, as such, strictly a theory of how to categorize interest groups.

Our framework for mapping goals on to interest group strategies is displayed in

Table 1: Types of Legislators Targeted, Based on Interest Group Goals

<b>Change v. Status Quo</b>	<b>Breadth of Group Goals</b>	
	Particularistic	Broad
Policy Change	Central players, across parties	Many legislators, across parties
Policy Protection	Central players, within parties	Many legislators, within parties

Table 1. All other things equal, we posit that groups that have specific policy goals will focus their efforts on what we call “central players.” For a group with a limited policy agenda there is very little incentive for them to have an expansive list of legislators involved in their strategic action because there are decreasing returns for their investments as they get away from those legislators who can help them. Groups with broader policy aims have different incentives. Although they may be interested in an agriculture bill today, tomorrow they may be focusing on an energy bill. As a consequence, they need to expand their ability to reach out to many legislators; in the context of Congress, this often means working through the parties, which are better set up for building large coalitions.

The second dimension of interest groups is important not for whether how many legislators they target, but rather for whether they need (or expect) legislators in different parties to cooperate with each other. All things equal, we expect that interest groups that are interested in protecting their previous policy gains will “close ranks” with sympathetic legislators. Conversely, since the American legislative process is generally biased against change, groups that are seeking policy change are more likely to try to build coalitions that reach across party lines.

## 2.2 Legislative Networks

So far this discussion focuses on individual interest groups, leaving until now the issue of how their behavior aggregates in such a way that affects parties. This forces us to consider what happens when multiple interest groups pursue different strategies and how that might be reflected in partisan behavior. The key to our approach is

focus on how interest groups create networks between legislators. Just as there are social, partisan, and organizational networks that are related to lawmaking (Fowler & Cho 2010, Fowler 2006*a*, Fowler 2006*b*, Victor & Ringe 2009, Zhang, Friend, Traud, Porter, Fowler & Mucha 2008), we argue that this is the case for interest groups as well (Koger & Victor 2009).

Start with an interest group's decisions about whom support financially during an electoral cycle, choices that are often made under resource constraints. Although we expect that the group's choices are influenced by factors outside of a group's strategic focus (e.g., the competitiveness of the election), all else equal this group will target legislators based on their motivations as represented in Table 1. All of these legislators targeted by this group now share something in common—a link to an interest group with a particular set of goals. As all the other interest groups make their own decisions, they bring legislators either closer together in the network by giving them a common link or pulling apart by not linking them. To the degree that interest groups in a policy domain share common strategies, we expect that structure of these networks will reflect the bias of the pressure system towards or against breadth, and for partisan competition or cooperation.

Consider the an example where there are 100 interest groups that operate the same policy area. To simply a bit, lets assume all of the interest have equal resources and will make 50 donations. If all of the groups were to pursue a particularistic, policy protection strategy then we expect there to be a stark partisan divide in the network (as they would give resources to their allies) and that most of the donations would be concentrated on a smaller group of legislators (probably those most involved in health policy). If we took half of those interest groups and changed their strategy from particularistic to one that is broad and seeks policy change then the structure of the network should change. There would still be more *in-party links* among the central players than *out-party links*, but there should be more space for collaboration from in-party connects among those players. And, of course, we would expect party

coalitions would be stronger (meaning in-party/out-party links are more meaningful) if there were more for groups with broader goals.

Our argument does not depend on whether individual interest groups do or do not have success pursuing their specific aims. Instead, the focus is in how their strategies can create common pressures among legislators—in other words, interdependence. Generally speaking, this means that pressure system can under certain conditions create incentives for cooperation among parties and under others create pressure for partisan conflict. It also suggests conditions under which we should see that conflict focused among a handful of legislators, and when it should reverberate throughout the entire network.

## **2.3 Analyzing the Relationship Between Networks and Partisan Behavior**

What patterns should we expect to see among legislators when we examining these networks? First, it worth noting that our model is not sufficiently developed to address questions of causality. Just as it possible that the behavior of policy makers are what attract interest groups to target them, it is possible that the groups are what create the conditions driving partisan behavior. As a consequence, we try to restrict our discussion to the presence of relationships consistent with our argument rather than testing specific causal hypotheses.<sup>1</sup> Second, our model is more suitable for identifying particular structures that do emerge, rather than predicting which ones will. Because our theory is descriptive, we seek to understand what types of network structures are likely to emerge and how the relate to partisan behavior.

For our aggregate examination, we first expect that there is a recognizable structure to legislative networks that is separate from density in contributions. We therefore start our analysis by describing patterns in our contribution networks. To the degree

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<sup>1</sup>This is a focus of our future work.

that we see centralized networks—networks where legislators are closer together—we expect that it reflects interest groups concentrating on central players. If there are clear partisan splits, with few connections between parties, it suggests networks that are associated with partisan competition. We then examine two different measures of location in these networks—partisan differentiation and closeness centrality—for the purpose of diagnosing types of biases we see in the structure of the networks. When the interest group network is more centralized and polarized, we see this as evidence of a sector in which particularistic interest groups are trying to protect the status quo. If the network is centralized and not polarized, it suggests a network that is leaning toward policy change. And to the degree that the network is particularist, we expect to see conflict or cooperation outside of the most central players. Ultimately our goal in the aggregate analysis is understand whether networks promote breadth or not, and competition or cooperation.

At the individual level, we examine the factors related to the social location of legislators. The purpose of this examination is to understand whether a legislator's position in the network is related to other factors that influence party behavior. Although we cannot examine causality in this context, it can help us understand both what types of legislators are in specific types of positions and contextualize the relationship of social location with partisan behavior. We also examine the relationship between partisan unity and our measures of social location. If partisan unity corresponds to the structure of inter and intra partisan ties, this is consistent with the groups either building or supporting partisan behavior in ways consistent with Table 1. So if the relationship between intra versus interparty ties is negative, that is as consistent with interest groups bring the entire towards more consensual decision-making. And our expectations about centrality are consistent with our earlier discussion which suggest whether interest groups are targeting legislators broadly, or with more narrow purposes in mind.

## 3 Data and Methods

### 3.1 Network Data

We look at the relationship between members of Congress (MCs) and PACs in five policy sectors: agriculture, defense, communication, energy, and health. The five policy sectors are defined by The Center for Responsive Politics (CRP), which categorizes PACs based upon the sector which they spend most of their time operating. Their contribution data derives from financial disclosure forms submitted to the Federal Election Commission. Using these data, we create legislative networks—links between MCs—by examining their number of shared PAC contributors. Put differently, a tie between two MCs exists when both receive a contribution from the same PAC. The edge weight is then the total number of PACs contributing to both MCs.

The edge weight is important in the construction of the network. Shared contributions are very common; in fact, it is uncommon for two MCs do not have at least one shared contribution. This can be seen from the histograms in Figure 1. Each of these represents the frequency at which we see ties with different edge values between dyads (any two MCs). In all five policy sectors, the histograms are skewed such that most dyads have relatively small values in the range of one to ten contributors in common. At the same time, there are a significant number of legislators who share many PAC contributors in common (sometimes stretching above 100!).

This raises the question of what represents a meaningful network tie when all MCs are at minimally linked. For this paper, we opt to transform our valued links to binary links by treating any number of shared contributions below the median as zero (implying there is no meaningful link) and those above the median as zero (implying the presence of a tie). In a statistical sense this implies that meaningful interdependence between legislators is not present unless the dyad is above the median number of shared contributors. As will be discussed in more detail in the analysis section, setting

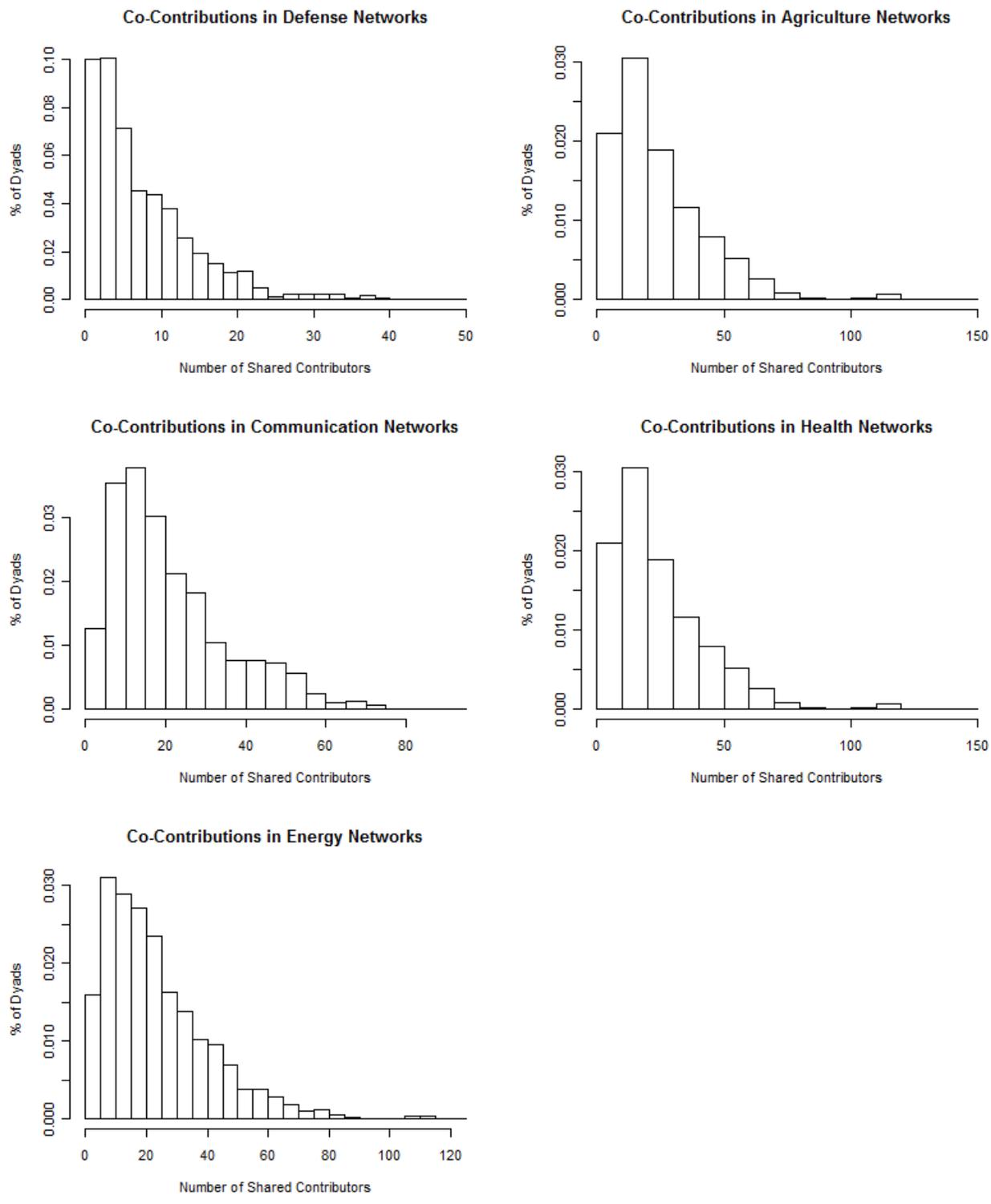


Figure 1: Number of Co-contribution Between Pairs of Legislators, by Policy Sector

a cut point at the median number of shared contributions results in the structure of the network moving from a very dense and difficult to interpret network to one that reveals more accurately the underlying structure of the network.

## 3.2 Network Measures

Our analysis particularly concerns the degree to which the legislative networks constructed out of interest group donations are characterized by 1) emphasizing partisan coalitions versus encouraging bipartisan cooperation and 2) focusing on central players or wider groups of legislators. Toward that end, we extract two measures of MC's social location in the network that are consistent with these goals. First, we model partisan networks as the difference between each legislator's average edge value in in-party dyads and average edge value in out-party dyads. This measure illustrates how politically lopsided a MC's network might be. If we assume that HM will at times turn to their network to seek information on how to vote on a piece of legislation, the partisan context of their network might influence voting behavior. In other words, it is possible that as a MC moves from an even mix of ties between Republicans and Democrats to one that is less balanced, their party voting patterns might favor a particular party. Thus, it is important to understand the factors that contribute to partisan networks and the effects partisan networks have on polarization.

In addition to partisan differentiation, interest groups might deliberately draw into or focus on MCs at the center of the network to help promote their views. For this part of the analyses, we use the centrality measure of closeness. We believe closeness to be the most germane measure in context of our project because it is an indication of reach of individual actors in the network. Those with a high measure of closeness can easily access the greater portions of the overall network, thus holding the potential to have greater influence on the network.

### 3.3 Related Variables

Our analysis will involve individual attributes that are related to social location of legislators. Several of these are focused mainly on variables that shed light on what kind of MCs have highly partisan and/or central locations in the network. Two of these measures reflect basic political interests. The first is a dichotomous variable to capture differences between Democrats (coded 0) and Republicans (coded 1). We also include a measure that allows us to understand how ideology might factor into patterns of interest group donations. We include a measure for ideology to capture the difference between moderate MC and those who lie further toward the extreme ends of the political spectrum. This ideological extremity variable is measured as the absolute value of first dimension NOMINATE score (Poole & Rosenthal 1997). The theoretical justification for this variable is that interest groups might have proclivity to donate based on ideology, either to reward sympathetic legislators or make moderates more susceptible their interests.

In addition to these measures of preference, we also include two variables in our analysis that reflect institutional factors. The first of these is district preferences, reflecting the fact that legislators are not entirely free agents and must themselves be concerned about the particular interests of their constituents. Here we use a very general proxy of the leanings of the district by using President Bush's percentage of the two-party vote in the 2004 election. We also include a control variable for House leadership positions as these carry a disproportionate amount of attention and influence that could bias the giving behavior of interest groups. In light of this we control of for this potential bias by including a dummy variable where those holding key party positions equal one and all other members equal zero. Leadership positions has defined by the House of Representatives include, Speaker of the House, Majority and Minority Leader, Majority and Minority Whip, Chief Deputy Republican Whip, and Senior Chief Deputy Majority Whip. Additionally, we include membership on the Rules committee

as a leadership position given the power of the post.

Finally, we are interested in understanding how social position might influence partisan behavior. To get at this phenomenon, we measure the MCs willingness to vote with their party. As () note, a CM voting with their political party one-hundred percent of the time can be considered highly partisan. Defection from a party vote can be understood as factors other than party influencing voting decisions. Using this characterization of party unity, we seek to understand how network factors are related to party unity. We coded all roll call votes for the 110th Congress into policy sector based on CRP’s policy sectors, we then determined the mean vote for each party, and then determined the percentage that each MC voted with their party. This yields a measure of partisan unity within each of our policy sectors.

## 4 Analysis

The analysis section is laid out as follows. The first section provides a descriptive analysis of the network, with an emphasis given to the observed structure in light of our theory of interest group behavior. We then proceed with an examination of the factors related to our measures of social position (i.e. partisan ties and closeness). Next we discuss social location is correlated with partisan behavior in each policy sector. We conclude the paper with an interpretation of our results and what findings might suggest for the future of our project.

### 4.1 Description of Network Structure

The top half of Table 2 highlights the high level of density in the legislative networks. In three of the five policy sectors all MC had connections with at least one other member and in a fourth 96% of the dyads shared a contributor. Only in the health sector did we find a significant portion of the MC to not share connections—only 50%

of the dyads are linked. The high level of connectivity implies one of two things about these networks. One possibility is that interest groups do not create meaningful ties in the aggregate; the other possibility is that there is a notable amount of noise in these networks and ties only become meaningful after some critical mass. We lean towards the second possibility, in part because further analysis shows that there are meaningful patterns in these networks but also because it comports with the characterization of the pressure system as heterogeneous (Heinz et al. 1993, Jack L. Walker 1991, Bauer, de Sola Pool & Dexter 1972, Berry 1989). As a simple demonstration, contrast the health care network with the others makes it is clear that legislators can be organized in significantly ways depending on the underlying decisions of the groups.

Nevertheless, we are still left challenge of reducing the noise in order to begin understanding the overarching structure. As suggested by Figure 1, the underlying problem is that there is a lot of interest group activity. On this point, one important characteristic of those distribution is that some point in each policy sector there is a precipitous drop in the percentage of dyads having high levels of shared contributions. We argue that it is at these relatively higher levels of connectivity that we can separate the wheat from the chaffe.

As shown in the second half of Table 2, separating the network at the median number of shared contributions does in fact help us understand that these are highly structured networks. Across all five policy sector our cut-point reduced the number of connected dyads to below 50% and begins to reveal differences in the structure of the overall network graph. There is still a notable level of density, but more telling is that this density is also related to centralization. While the former tells us "... the general level of cohesion...centralization describes the extent to which this cohesion is organized around particular focal points" (Scott 2000, 89). As can be seen by two of our centralization measures, the general pattern is the high compactness of the networks—they are tightly organized around legislators with high degree or closeness centrality. The low level of betweenness centrality, suggests that there are brokers

Table 2: Summary of Legislation Co-Contribution Networks

	Defense	Agriculture	Communication	Health	Energy
Complete Network					
% Linked Dyads	96%	100%	100%	50%	100%
Quartiles					
1st	1-3	1-12	1-11	1-12	1-11
2nd	4-6	13-20	12-18	12-20	12-20
3rd	7-11	21-34	19-29	21-34	21-33
4th	12-49	35-142	30-93	35-142	34-124
Median Cutpoint Network					
% Linked Dyads	44%	48%	47%	34%	48%
Centralization					
Degree	0.565	0.518	0.531	0.190	0.520
Betweenness	0.004	0.004	0.004	0.002	0.004
Closeness	0.653	0.615	0.626	0.223	0.618

that provide centers for the networks. In all, the statistical measures point to a core-periphery structure. Interestingly, the health sector stands out as different on all of these scores, limited connectivity and less centralization.

Figure 2 provides a visualization of this structure. All sectors, minus health, are characterized by a dense core of MCs with a large number of the MCs occupying the periphery of the network. We also see a small number of MCs occupying the space between the core and periphery. The substantive interpretation is that a core of MC exists that are central to the network, with a small number of MCs holding a moderately central place in the network, and the rest being unrelated. A single core cluster show that interest groups will tend to focus their efforts on central actors, though the data show that “central” actors is itself a very large group of MCs. This high level of compactness suggests that in general the pressure system is associated with limiting the number of players in the lawmaking process, though this is still a significant subset of the whole population.

When looking at the visualization of the health network, it is obvious why this sector has markedly lower summary centralization measures. Since the network is essentially

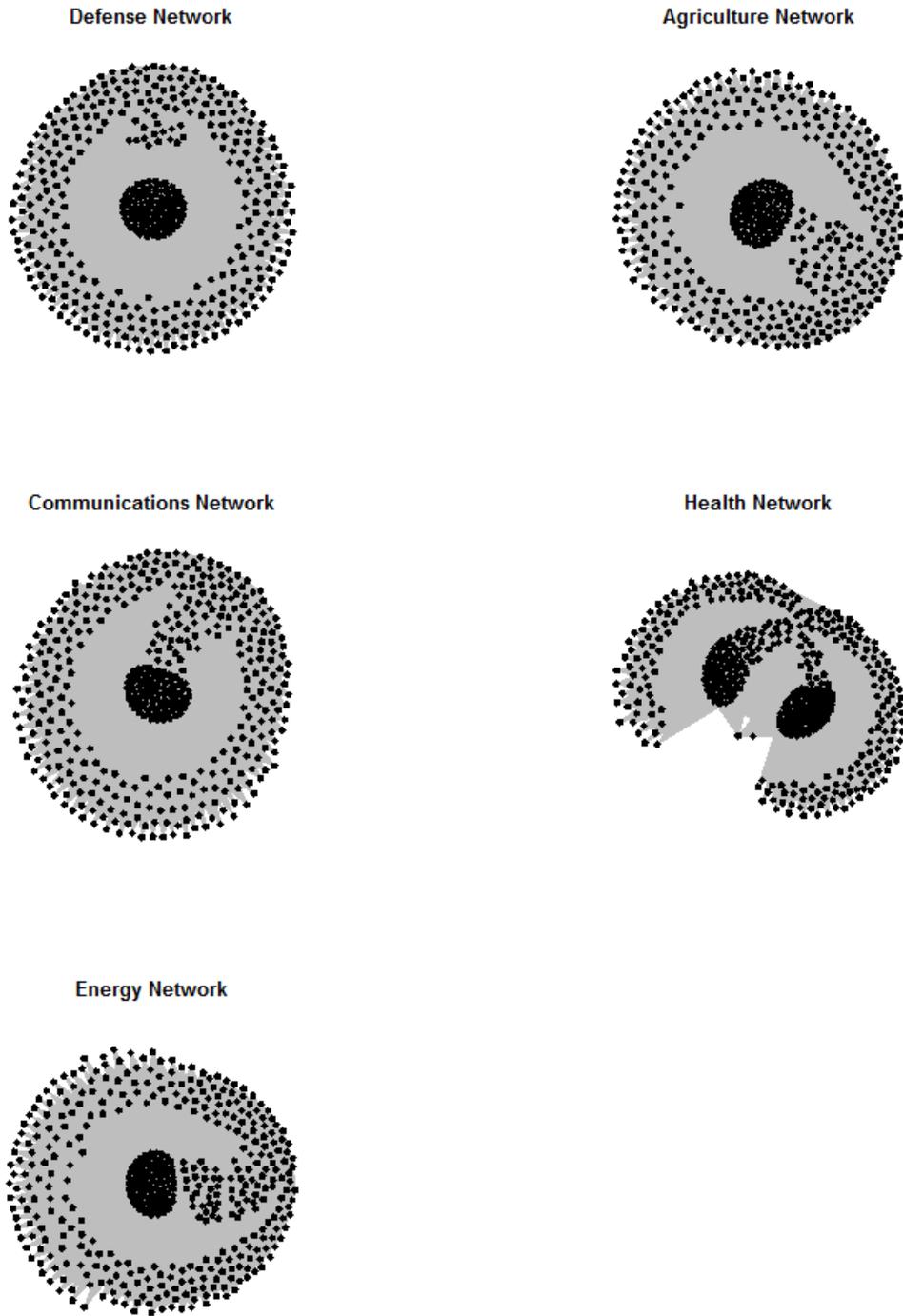


Figure 2: Visualization of Co-Contribution Networks, by Policy Sector

divided in half, the the ability to reach other parts of the network requires more steps; thus, resulting in lower levels of closeness centrality. The two clusters holding central positions in the network also means the ability to reach central players is increased. In contrast, the health network clearly illustrates a structure in line with what we would expect from a polarized network.

## 4.2 Sources of Network Structure

Generally, the results above point to networks where most of the “action” seems to among a core set of densely connected legislators. In this section we seek to understand what lies beneath these legislative structures by considering the locations of legislators in them. We do this by examining partisan differentiation and closeness centrality in this dense web of connections. We begin with an examination of the joint distribution of two measures over four of our policy areas, displayed in Figure 3.<sup>2</sup> Through close examination of these scatterplots, we can begin to understand the degree to which the core-periphery structure we typically see above maps onto our theoretical description of how interest group influence maps into partisan behavior.

One thing to note is that in three of our policy areas—health care excepted—there is a clear separation between the core and periphery. To be sure, most legislators in these networks have relatively high closeness centrality scores, but there a clear distinction between those at the center and the others. Another pattern in these same three networks is that there is a tendency between slightly increasing partisan differentiation as closeness centrality increases, with a clearly more partisan skew at the highest levels of centrality. This is akin to “a ground war” among interest groups, where partisanship is generally encouraged most clearly among most central. Such a characterization suggests that a scenario in which the interest groups are focused on protecting their entrenched interests, but not in a way that spreads partisan conflict

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<sup>2</sup>We apologize that a last minute computer error prevents us from reporting the information on the defense-related legislative network.

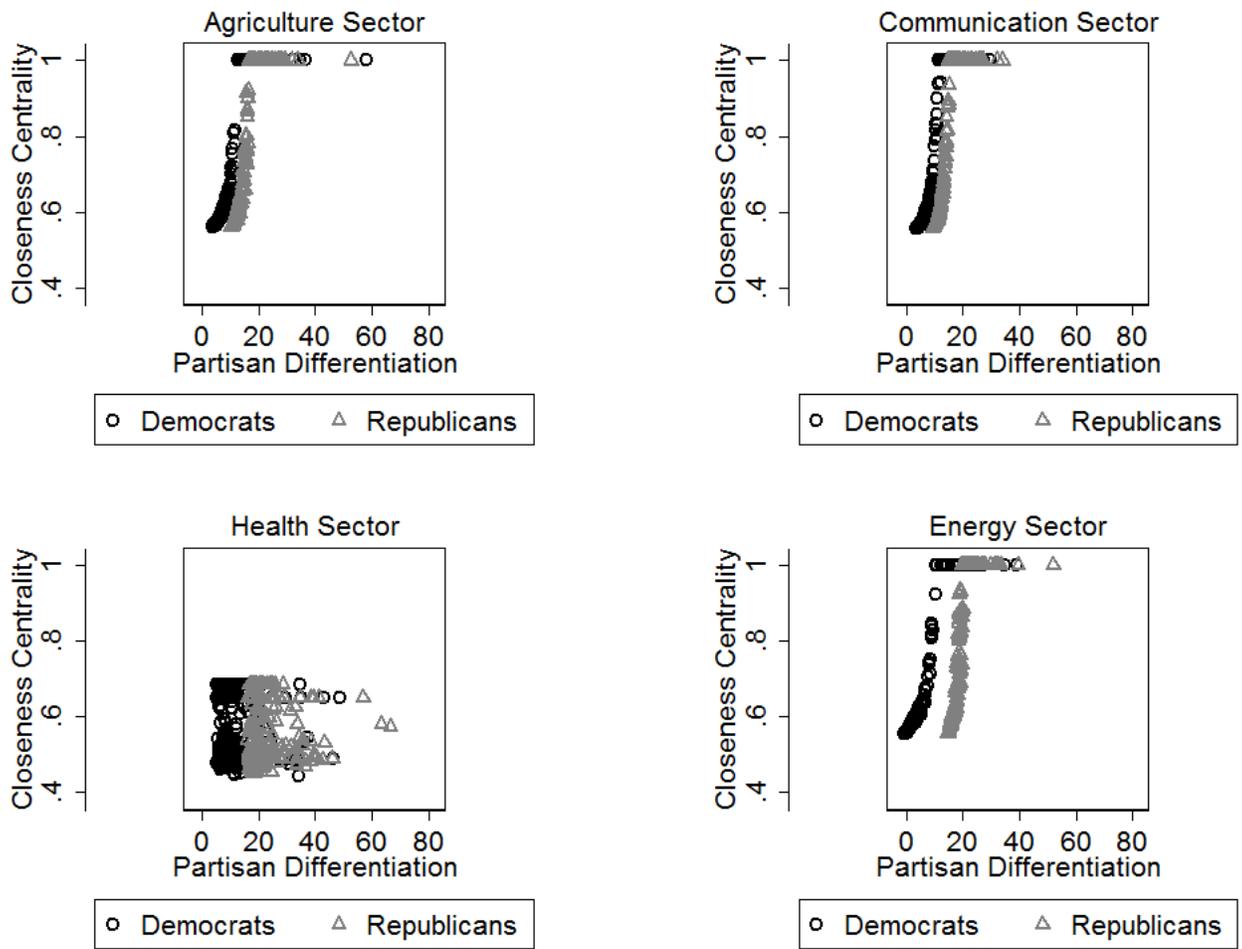


Figure 3: Partisan Differentiation and Closeness Centrality in Four Policy Sectors

far into the party.

There are two exceptions to this characterization. One is in the energy sector, where Republicans are much more likely to be attached to their fellow partisans than are the Democrats, particularly at the periphery of the network. The interest groups are, in essence, encouraging a network that is more likely to encourage Democrats to work with Republicans than vice versa. Here the core-periphery structure is evident, but there is a difference in the partisan incentives felt by representatives in the two parties. The second exception is the health care network. Here there is very little concentration in the network and the distribution of partisan differentiation is higher for Democrats than Republicans. This seems more consistent with widespread partisan competition, though again we see that the Republicans have more strong intra-party ties than Democrats.

Table 3 examines the correlates of our two social location measures to get some sense of how attributes of legislators are related. We find that with two exceptions, ideological extremity reduces the number of partisan connections and reduces centrality closeness. While this finding may seem counter-intuitive, there are two possible explanations for this. First, we may be picking up the idea of the work horse versus the show horse—PACs will give to those making noise, but they tend to divert the bulk of their resources toward those who are working to get things accomplished. Along these lines, because the more extreme MCs are attracting attention, there may be a counteractive lobbying effect here also. For example, a conservative group knows more ideological Republicans are going to vote the party line, thus they do not invest in them. However, because they are attracting attention, liberal interest groups attempt to buy time. This then drives conservative groups to make a donation after all; thus, why we see less party differentiation with the more extreme MC.

We also find a MC's district has little effect on legislator location, except in the realm of agriculture where more legislators from conservative districts are more likely to be highly differentiated and central. What can be taken away from these non-findings

Table 3: Factors Related to Social Location, OLS Regression Model

Panel A. Partisan Differentiation										
	Health		Agriculture		Communication		Defense		Energy	
	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.
Ideology	-2.08	2.64	-5.92	2.10	-0.79	1.61	2.30	0.76	-4.87	1.82
Bush 04	-0.04	0.04	0.15	0.03	-0.02	0.02	0.02	0.01	0.05	0.02
Leadership	10.47	2.29	3.45	1.83	5.46	1.40	0.87	0.66	3.53	1.59
GOP	11.94	1.31	5.40	1.04	6.79	0.80	2.80	0.38	16.13	0.91
Constant	14.29	2.29	4.57	1.67	8.79	1.28	2.25	0.61	3.23	1.45

Panel B. Closeness Centrality										
	Health		Agriculture		Communication		Defense		Energy	
	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.	$\beta$	s.e.
Ideology	-0.0607	0.0283	0.1546	0.0552	-0.0184	0.0567			-0.1190	0.0519
Bush 04	-0.0008	0.0003	0.0037	0.0007	-0.0009	0.0008			0.0011	0.0007
Leadership	-0.0066	0.0246	0.1250	0.0470	0.1861	0.0493			0.0694	0.0451
GOP	0.0242	0.0140	0.0480	0.0269	0.0736	0.0281			0.1475	0.0257
Constant	0.6282	0.0225	0.5547	0.0430	0.7022	0.0450			0.6239	0.0412

is, however, quite telling. The fact that a MC's district does not have large impact on the social position within policy sectors illustrates that interest groups are not targeting members based on local interests. What is more, district influence by policy sector behave as one would intuitively expect. Our district variable is significant in the agriculture and energy sectors where localized interest would exist and are not significant in policy sectors that affect broad constituencies such as communications and health care

Those holding leadership positions tend to have more partisan differentiation and are more central in the network. Due to the the attention, power, and name recognition that comes with leadership offices, that is not not surprising per se. Yet, it is important to recognize that these sources of intitutional power translate into social positions that make them the targets of *partisan* interests. Though interestingly leadership positions do not always result in more partisan connections or a more central place in the network in all sectors, as seen in the case of health care.

Finally, across the board Republicans had higher levels of partisan ties and were more central in the network. The only exception to this finding is for our closeness

measure in the health sector, party affiliations do not influence one's level of centralization in health care. Republicans had between 2-16 more partisan ties than democrats, and measured closeness scores between .02-.14 higher than Democrats. The impact of party range from a minimal to a substantial impact on social positions. The fact that Republicans have more partisan ties and are more central to the network illustrates our idea of interest group mood. As discussed above, to achieve policy shifts without major opposition, there needs to be consensus among the majority of interest groups. What is more, there must be bipartisan effort.<sup>3</sup> The fact that Republicans have slightly more members occupying central positions is an indication of the direction that interest groups in these sectors wish to shift policy. It is important to note, however, because there is only a slight advantage this should not be taken to mean that interest groups do not want to induce cooperation. As will be discussed in more detail below, our results for the influence and magnitude of party on social position transfer to some interesting finding on party unity.

### 4.3 Network Structure and Partisan Unity

Thus far the results show that the networks are dense, strongly centralized, more partisan at the core, and consistent with interest groups supporting relatively focused partisan competition. But does this translate into more or less partisan organization? There are three clear possibilities here. First, interest groups may despite their best efforts have little impact on the level of partisan competition. This might reflect in general terms what might be characterized as "traditional" interest group politics, where the concerns are so specific they have no impact on partisan organization. Second, interest groups might be strong partisan ties *because* there is a lack of partisanship. Finally, interest groups may be creating or at least enhancing partisan organization.

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<sup>3</sup>This notion is in line with policy literature that notes policy changes occur at the margins. In order to induce change, shifts in policy will be small due to the fact that board coalitions of MC must be on board. What is more, interest groups most likely will not pursue substantial shifts in policy because such efforts are bound to be met with resistance.

Table 4: Legislative Social Location and Partisan Unity, OLS Regression Model

Panel A. Democrats				
Issue Domain	Partisan Differentiation		Closeness Centrality	
	$\beta$	s.e.	$\beta$	s.e.
Health	0.001	0.028	6.706	2.463**
Agriculture	-0.001	0.002	0.095	0.089
Communication	0.001	0.001	-0.000	0.000
Defense	0.004	0.002**	-0.000	0.000
Energy	-0.002	0.001**	-0.014	0.036

Panel B. Republican				
Issue Domain	Partisan Differentiation		Closeness Centrality	
	$\beta$	s.e.	$\beta$	s.e.
Health	-0.023	0.061	1.211	6.076
Agriculture	0.002	0.002	0.047	0.048
Communication	0.000	0.002	0.000	0.000
Defense	0.004	0.003	-0.000	0.000
Energy	0.001	0.001	0.057	0.038*

Notes. All models included controls for legislator ideology, district vote for Bush in 2004, leadership position, and the appropriate committee memberships. \*\*  $p < .10$ , \*  $p < .05$

To examine these possibilities, we examine the relationship of our measures of social location of legislators with party unity scores, a basic indicator of partisan organization.

Table 4 shows the partial regression results for our two measures of social position as predictor of party unity. In terms of the level of partisan network, there is little to no influence on voting behavior. Democrats are the only party where party network has a significant influence on partisanship. The substantive interpretation of this variable, however, reveals very little influence on party unity. For example in the defense sector, a one unit increase in our measure of party differentiation leads to a .17% increase in party unity. Party unity for Republicans is not influenced by our measure of partisan differentiation for any sector.

Closeness centrality, on the other hand, does prove to be a significant predictor for party unity for both democrats and republicans. We find that democrats behave in a more partisan manner in the health sector and republicans in the energy sector. In terms of substantive interpretations, for democrats in the health sector, on average a one unit change in closeness leads to a 6% increase in party unity. The effect of closeness

on republicans in the energy sector is much weaker. On average, as Republicans become more central to the network the likelihood for party unity increase by about half a percent.

## 5 Conclusion

At times interest groups will attempt to build cooperation and other times they will try to induce conflict. Put differently, at times interest groups will attempt to induce bipartisanship and other times they will try to polarize the two parties. To be sure, bipartisanship does not mean interest groups in the aggregate will not try to move policy in an ideological direction. The question we are left with is when should we expect to see cooperation and when should we expect to see conflict. In short, it depends on interest group mood, the level of opposition to the direction of policy, and the ability of the opposition to organize legislators in a meaningful way.

Turning to our network visualizations, we find two distinct types of networks. For agriculture, communications, defense and energy we see a dense configuration of central players. From our analysis of social position, we know that those making up the center tend to be more Republican, moderate, and tend to hold leadership positions. In contrast, the health sector presents a network structure with two distinct cores of central actors. What is more, our analysis on the factors influences network position we find party to not be a significant influence on network position. We take this to mean that interest groups have pulled the network into two separate clusters of central actors based on party affiliation.

The health sector provides the most intriguing results. We find one's position in the network to be related to party unity. Recalling the network visualization for the health sector, we find this sector to present a structure in line with polarization. There are two clear clusters of central players, as opposed to one cluster seen in the other four policy sectors. This the visualization is interesting in light of our finding that

partisan affiliations do not impact ones position in the health network. In other words, interest groups are not systematically bringing one party into the center. And based on our network visualization, we can take the two clusters to mean that interest groups are creating two distinct clusters of based on party affiliation. In other words, interest groups are fighting to build party coalitions in to protect their policy interests agendas. In other words, interest groups are not creating a network of cooperation to move policy in a particular ideological direction (as might be the case in our other policy sectors), rather they creating separate networks based on party affiliation.

Our data also present interesting patterns that lend to our idea of interest group mood. It should be noted that we are nto attempting to play fast a loose with our analysis; rather, we are simply pointing out patterns that are promising as we move forward with our project. Looking at party unity in the communication and energy sectors we find the signs for Democrats to be in the negative directions, meaning party defection. In contrast, for these same sectors we see coefficients for Republicans in a positive direction, indicating party unity. What we can take from this is that interest groups are stacking central player with republicans and moderates, which is in turn moving policy votes in the conservative direction. Point being, when we consider the our theory of bringing HM together in light of these patterns, this may be an indication of network effects. The fact that we are not registering significance is not all that surprising. Given what we know about public policy, that being it rarely changes beyond the margins, we can expect subtle changing in voting patterns. In other words, interest groups do not need major shifts in voting behavior to move public policy. They simply need enough votes to move forward.

There is also an interesting story to be found in the defense network. Again, not significant; however, the signs for democrats and republicans in terms of party unity are both in the negative directions. This indicates that there is a tendency for both parties to defect. We also find that ideological extremity has a significant and positive impact on the number of ideological ties; however ideological extremity has

an opposite effect on our measure of network position. Additionally, party affiliation for this sector has a minimal substantive impact when compared to the other sectors. Putting all of this together, it is possible that this is a sign of interest groups fighting for an ideological shift, yet producing an environment that maintains status quo. By targeting the party faithful, interest groups might be setting the stages to pull apart the core into ideological camps. By attempting to increase the importance of partisans, interest groups may be using them to induce party discipline.

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