Washington Lobbyists in the Core and on the Periphery

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Abstract

For decades, political scientists have had two divergent views on lobbyists in Washington. On the one hand they focus on the privileged access of a few groups in balkanized issue niches, and on the other they observe highly inclusive lobbying campaigns where hundreds of lobbyists vigorously compete for policymakers' attention. Not surprisingly, these disparate observations lead to contradictory conclusions about lobbying tactics, relations with relevant policymakers, and the nature of interest group influence. In this paper we make a simple, yet novel, empirical observation: these disparate inferences about lobbying at the micro-level are not inconsistent when we uncover the structure of lobbyists' interactions at the macro-level. That is, both views are correct, depending on the policy context. Using data from 293,631 Lobbying Disclosure Act (LDA) reports filed between 1998 and 2008—which consists of 2,077,404 observations of 35,826 individual lobbyists reporting lobbying activity in 78 issue areas—we reveal that the Washington lobbying community has a fundamental and stable core-periphery structure. We then document how the empirically derived core-periphery mapping is a superior way to differentiate bandwagon or issue niche policy domains.

Paper prepared for presentation at the American Political Science Annual Meeting, Chicago, IL, Aug. 29-Sept. 1, 2013.

The literature on interest group relations with government has long been conflicted because scholars and journalists alike have focused on two seemingly contradictory states of affairs: close relations among small numbers of lobbyists and government insiders on obscure, technical issues such as agriculture, transportation, and telecommunications regulation—i.e., those characterized by iron triangles, policy subsystems, and interest niches—and occasions where a large, diverse, and pluralistic set of interest groups engage policymakers on highly salient issues like the federal budget, taxes, and health care reform. These very different observations of lobbying led Baumgartner and Leech (1998) to emphasize the contradictory nature of much of the literature on lobbying. Such internal contradictions and a lack of a common theoretical framework remains one of the most notable features of the literature (Hojnacki et al 2012).

Observers point to virtual feeding frenzies where thousands of lobbyists participate in high-profile issues like health care reform, which calls into question the existence of impregnable iron triangles. Such instances can be traced to the rapid and steady growth of the interest group system in Washington over many decades (Berry 1999). Though interest group scholars are concerned about this growth because it is not evident that all interests are represented equally (Schlozman and Tierney 1983, Walker 1991, Baumgartner and Leech 2001, Baumgartner et al 2009), Salisbury (1990) pointed out what he called the interest group paradox: as the overall number of groups in Washington increases, each individual group's ability to influence any single issue or policy domain will be diminished. With so much competition, individual groups struggle to prove to lawmakers that they can offer some tangible electoral benefits (Hansen 1991). As a result, a "hollow core" where no single group or subset of elite groups dominate characterizes the Washington interest group system (Heinz et al 1993).

Alternatively, some interest group scholars stress how groups differentiate themselves by occupying relatively walled-off issue niches. Browne (1990) introduced the idea that groups strive to differentiate themselves in Washington by establishing a balkanized niche "characterized by obsessive focus on a single facet" of policy (489). A host of empirical evidence has accumulated to show that groups indeed gravitate toward issues and policy domains that are sparsely populated so that they may have a greater impact on the policy process (Gray and Lowery 1996, 1997; Hojnacki 1997; Haider-Markel 1997 Heaney 2004a). Heaney (2004b) goes so far as to show that one of the primary strategic functions of an interest group is to create unique identities as a way to maximize their perceived policy expertise and minimize competition.

Yet there is little reason to think that lobbying is an either/or phenomenon. Baumgartner and Leech (2001) not only find that a large majority of issues draw attention from relatively few groups, but also show that a handful of issues involved the overwhelming majority of interest group activity. Patterns of interest group activities suggest that lobbying strategies—establishing a niche or jumping on a "policy bandwagon"—are a function of the political context as much as they are the group's internal motivations: "Two issues with relatively similar objective scopes may attract greatly different levels of attention in a self-reinforcing process characterized by cuetaking and imitation" (Baumgartner and Leech 2001, 1206). Low-salience niche lobbying is indeed quite a different beast than that which occurs more in the limelight.

This distinction is not new, but to date we have no way to explain why lobbying on niche issues like agriculture and on big issues like comprehensive health care reform is so different, other than their obvious substantive dissimilarities. So, how exactly should we distinguish between policy domains that are home to niches and those that produce policy bandwagons?

We contend that making generalizations about the extreme cases of highly competitive lobbying is just as misleading as drawing sweeping conclusions about niche lobbying based solely on studies of selected low-salience issues. Yet such generalizations are characteristic of the literature. Our goal here is to document the policy domain differentiation and interest niche partitioning that occurs on the fringes, and to identify which domains attract high levels of interest competition. Neither picture by itself is an accurate view of the system. Rather than seek a single model that predicts an "average" type of lobbying, we instead seek to empirically uncover the conditions that generate both bandwagons and niches.

The paper proceeds as follows. First, we lay out a number of expectations about lobbyists and their activities that stem from the literature to test whether our analysis exposes genuine bandwagon and niche domains. Second, we describe our data, which we argue is the largest possible source of information on lobbying. Third, we map a network structure of the Washington interest group system based on lobbyists and their issue affiliations (Carpenter, Esterling, and Lazer 1998; Carpenter, Esterling, and Lazer 2004; Grossman and Dominguez 2009). Finally, as a validation, we test our expectations using both theoretically deduced and empirically derived categorizations of policy domains. We show that our network model is superior in explaining differences about lobbyists and their representational activities. We conclude that a latent core-periphery network structure helps explain points of confusion in the accumulated literature on lobbying and make suggestions for future research.

Core and Periphery in Washington Lobbying

We offer a simple empirical solution to the problem of distinguishing between policy domains that can more or less be characterized as niche or bandwagon issues. We contend that micro-level domains do not differ simply on their subject matter or the on the government's role

in distributing benefits, but rather on their location in the macro-level lobbyist-issue affiliation network.

Large, dense networks like the ones we unearth from Lobbying Disclosure Act (LDA) reports—where individual lobbyists informally affiliate with each other across 78 "issue areas"—are typically characterized by a core-periphery structure (Wasserman and Faust 1994). The core-periphery partitioning of dense networks implies a "network that cannot be subdivided into exclusive cohesive subgroups or factions, although some actors may be much better connected than others. The network…consists of just one group to which all actors belong to a greater or lesser extent" (Borgatti and Everett 1999, 376). Simply observing cross-sectional descriptive statistics by domain—such as the number of lobbyists or interest groups engaged in them—does not offer a meaningful way to differentiate those few actors that are better connected.

Intuitively, we expect a network consisting of thousands of lobbyists representing thousands of interest organizations simultaneously vying for attention from a single federal government to follow this pattern. Policy domains are distinct in their subject matter, but they are still part of a single interest group system to which all lobbyists belong. Precisely which domains are at the core and which are on the periphery, however, is not intuitive. Rather than imposing some theoretical categorization from on high, we instead allow lobbyists' issue affiliations themselves to empirically reveal the core and periphery, perhaps in unexpected ways.

Accordingly, our primary expectation is that the lobbyist-issue area affiliation network will consist of a few core domains and a large majority of peripheral domains. This answers our primary research question: does the Washington influence network indeed break down into a core-periphery structure? If not, then of course we have nothing to add. But if so, and if this is a

consistent element of the structure year after year, then any description of lobbying needs to take this latent structure into account.

A fundamental core-periphery structure is meaningless if we do not also show that domains on the margin are more in line with niche lobbying, and those at the core are characterized by high levels of inclusiveness and competitiveness. In turn, we should observe different types of lobbyists and different representational activities in each.

There are two basic characteristics that distinguish individual lobbyists that can be gleaned from LDA disclosures: (a) whether or not they work as in-house employees or as forhire contract lobbyists, and (b) whether or not they have significant experience in government before becoming lobbyists. Individual lobbyists are often ignored in the study of lobbying influence, though it is logical that the type of lobbyist that an interest group employs is a key to influence (Lowery and Marchetti 2011). We expect that this strategic lobbying choice is related to whether the issue on which the group is lobbying is related to a periphery or core domain.

H_{1a}: *In-House Lobbyists Hypothesis*: In-house lobbyists employed directly by the clients they represent will be more active in core domains, and contract lobbyists will be more active on peripheral domains.

Simply, the policy issues in core domains will, by definition, garner the lion's share of attention by all lobbyists in the system. Those issues on the periphery that focus on a single facet of policy, though, will typically demand only marginal attention. Groups seeking to strategically allocate resources will not fill a full-time, in-house position for a lobbyist to focus on policies that only occasionally earn government attention. It simply makes more sense to put a contract lobbyist on retainer to focus on niche issues that necessarily attract less attention from government day in and day out.

The second basic type of lobbyist is whether they have gone through the so-called revolving door between government and the private sector, or if they came to their positions more conventionally as experts in an industry, as activists in a movement, or similar path.

H_{1b}: Revolving Door Lobbyists Hypothesis: Lobbyists with significant previous

government employment will be more active in core domains than in peripheral domains. Because core domains will be crowded, groups will seek out extraordinarily well-connected lobbyists relative to their many competitors. It is reasonable to expect that interest groups will strategically hire lobbyists with access to key government connections so that their message may be heard above the others.

Just as there are two key types of lobbyists, LDA reports also reveal two basic ways to distinguish lobbyists' representational activities: (a) their portfolio of clients, and (b) the issues on which lobby. Lobbyists may or may not represent clients from a variety of latent social, economic, and demographic groups. That is, they may work for any number of clients, and those clients may hail from a single industry or from a variety of sectors. Lobbyists who solely represent, say, pharmaceutical manufacturers, are very different than those who maintain a client book consisting of agribusiness, banking, defense contractors, *and* pharmaceutical manufacturers. Intuitively, we can expect these lobbyists to be active in different policy domains.

H_{3a}: *Client Diversity Hypothesis*: Lobbyists who represent a greater diversity of client interests will be more active in core domains than in peripheral domains.
Lobbyists with a greater variety of clients will more likely be engaged mostly in core domains, but also in those on the periphery. All else equal, their diverse mix of clients will, collectively, be more likely to want their interests represented in the core because all groups are more likely to be

active there. Conversely, those lobbyists who represent a single industry may find themselves at either the core or the periphery, but probably not both.

Similarly, lobbyists may develop specialized technical expertise in a specific policy domain, or may be policy generalists. For instance, a lobbyist with expertise on railroad safety regulations may focus exclusively on that narrow slice of transportation policy, whereas a lobbyist seeking to extract rents may do so simultaneously on a farm bill, a defense reauthorization, omnibus appropriations legislation, and a must-pass tax reconciliation bill.

 H_{3b} : *Policy Generalization Hypothesis*: Lobbyists who are active on a greater variety of policy issues are more likely to be active in core domains than those who specialize on one or a few issues.

The logic here is simple. Lobbyists who specialize on specific policy domains are precisely those who should be intuitively expected to occupy a niche. By definition, niche lobbying is done by specialists who obsessively focus on a particular issue. Conversely, policy generalists who spread their activities across multiple issue areas will be simultaneously active in more domains.

Underscoring all of these expectations is our key contribution to the literature: identifying which policy domains are home to niche issues and which are subject to policy bandwagons is not obvious. So, we proceed to create an affiliation network of lobbyists across many policy domains and then compare our empirically derived core-periphery domains to an alternative, theoretically deduced set of policy domains that reflect different government functions.

Data on Washington Lobbyists and Their Activities, 1998-2008

To test our theory we conduct the broadest possible empirical analysis of lobbyists' choices to become involved in some issues rather than others. We use a new dataset of 293,631

LDA reports filed from 1998 to 2008, disaggregated into 2,077,404 unique events where one of 35,826 lobbyists are affiliated with one of 78 issue areas.¹

The LDA requires all organizations and lobbying firms to report their lobbying activities semiannually,² including estimates of expenditures (or income, in the case of firms for hire), the names of individual lobbyists, the policy issues they focused on, and the federal agencies or legislative chambers that they contacted. If, in a given time period, they (1) are employed or retained by an organization engaged in lobbying activities, (2) make more than one lobbying contact a client's behalf, and (3) spend at least 20 percent of their time engaged in lobbying, then they are required to report their lobbying with the Clerk of the House or the Secretary of the Senate.³ Lobbyists must report the name of their clients (which may be the organization itself or a firm retained by the client), the issue areas and specific bills and regulatory issues on which they were active, and whether they were employed as a "covered official" in the federal government in the twenty years prior to the report.

While our reading of the literature rests on the assumption that substantively differentiated policy domains organize the interest group system, the LDA operationalizes domains as bureaucratic "issue area" categories that do not appear to follow a librarian's taxonomic logic of mutually exclusive and substantively exhaustive categories. Yet, there are two reasons why LDA issue area categories are internally valid for our analysis. First, these are the categories that lobbyists use, not the ones we would prefer in hindsight that they had used.

¹ The raw data set collected and organized by the Center for Responsive Politics (CRP). The original LDA form in 1996 included only 74 issue areas, and four more were added to the list over time. Two issues areas were added in 1997, and two more were added during our study: Homeland Security (HOM) in 2002 and Intelligence (INT) in 2007. A full list of LDA issue areas with their three-letter codes is included in Appendix A, along with the total number of report mentions. Throughout this manuscript we refer to three-letter codes to save space.

² Under the LDA, reports were filed semi-annually between 1998 and 2007. Quarterly reporting began in 2008 following revisions made under the Honest Government and Open Leadership Act of 2007. We drop data from the first and third quarters of 2008 to maintain consistency with the prior period.

³ This statutory definition most certainly undercounts the number of lobbyists in Washington, as many policy advocates maintain that they do not engage in "lobbying activities" according to the LDA.

That is, lobbyists perceive these issue areas to be the policy domains in which they are active, and they report accordingly. If they were active in multiple, similar issue areas, then they disclose that fact.⁴

Second, fortunately, core-periphery detection techniques allow for redundant and overlapping categories (Borgatti and Everett 1999); they simply treat them as if they are highly interrelated. Social network analysis is intended to organize and visualize data that is not otherwise meaningfully structured by some central authority, such as with scientific citation patterns. Additionally, as we show, categories that appear to substantively overlap do not necessarily occupy the same location within the network, giving us confidence that our empirically uncovered structure is a reliable reflection of lobbyists' activities.

For all of the 35,826 individual lobbyists in our dataset, then, we can know how many reports they filed, whether they were a covered official, whether they were hired as a consultant or were employed directly by the client, how many of the issue areas in which they were active, and how many clients they represented.⁵ Additionally, CRP aggregates lobbying clients by 121 economic industries, so we can also account for the diversity of economic interests that a lobbyist represents.

Table 1 summarizes the types of lobbyists and their activities by issue area.

[Insert Table 1 about here]

First, *in-house lobbyists* are coded 1 = employed directly for the LDA client, and 0 = contract lobbyist for more than 50 percent of the time registered between 1998 and 2008. The majority of

⁴ The data are also reliable and externally valid. Annual Government Accountability Office reports on lobbying disclosure compliance shows that very few report difficulty understanding LDA guidance, and nearly all lobbyists could provide documentary evidence to support their disclosures (Government Accountability Office 2013). Of course, GAO does not investigate those lobbyists who choose not to report activities.

⁵ Not all of the 35,992 lobbyists were active throughout the entire 11-year period. On average, 13,059.9 (SD = 1,325.5) individual lobbyists reported actively lobbying per year.

lobbyists were primarily employed as in-house lobbyists, with just over one-third working under contract, meaning the overwhelming number of lobbyists are employees of the interest organization they represent.

Second, *covered officials* is a dummy variable coded 1 = "covered officials" under the LDA definition, and 0 otherwise. Just under 10% of the census of lobbyists report having held high level government positions.⁶ Most media accounts of the lobbying industry tend to focus on the revolving door and "hired guns," though our summary suggests most lobbyists in Washington have no government experience and work directly for their clients as government affairs employees.

We not only distinguish between contract or in-house lobbyists and those with or without high-level government experience, but we can also describe lobbyists' representational activities across issue areas by summarizing their clients' industries. First, to examine the breadth of interests represented by lobbyists, we generate a summary measure of *client diversity* using CRP's classification of clients into economic industries. Specifically, we calculate an annual, normalized Shannon's *H* entropy score for each issue domain (Jennings et al 2012, Bevan et al n.d.; see Shannon 1948). Issue areas with an entropy score approaching 1 have a very diverse client base (e.g. clients evenly represent all existing industries), whereas those close to 0 will be narrower in their economic scope (e.g. clients only represent one or a few existing industries). For instance, the ENV issue area has an entropy score of 0.82, reflecting a relatively high diversity of economic interests. This is not surprising because so many industries—from crop farming to transportation to manufacturing—are all subject to environmental regulation. Alternatively, the BEV issue area has an entropy score of 0.46. This issue tends to attract

⁶ These are raw data from all LD-2 forms filed with the Secretary of the Senate, which underreports revolving door lobbying (LaPira and Thomas n.d.). We assume underreporting errors are distributed equally across issue areas.

attention only from industries linked by supply and distribution chains—such as beverage manufacturers, importers, distributors, and retailers—and some consumer or health advocacy groups.

The final characteristic of LDA issue areas that we report is a summary measure of *policy generalization*. This statistic represents the average proportion of lobbyists' activities in all LDA issue areas. Proportions theoretically equal to 1 would indicate that all lobbyists active in the given issue area are also active in all other issue areas. Conversely, proportions closer to 0 indicate that lobbyists active in the given issue area are not engaged in the remaining issue areas.⁷ So, the overall score represents the degree to which those lobbyists active in that domain tend to be specialists (closer to 0) or generalists (closer to 1). The mean issue area had a policy generalization value of 0.157 (SD = 0.055). In other words, lobbyists active in the typical issue area 18.9 of CRP's 121 industries.

The issue area that reflects the most policy specialization were UNM = 0.076 and MON = 0.093, whereas those populated by generalists included DEF = 0.312 and IND = 0.327. So, lobbyists active on unemployment issues are not likely active on many other issues, but those lobbying for defense are probably engaged in several other domains.

The Core-Periphery Structure of the Lobbying Network

Our primary expectation is that the interest group network will generate a latent structure consisting of a single group partitioned with a small number of closely connected issue areas at the core and the majority of issue areas at the periphery. Our unit of analysis to construct the network is the issue area-issue area dyad, where issue areas are nodes and lobbyists' affiliations

⁷ By definition, all lobbyists were active in at least one issue area, so this value approaches 0 asymptotically. The number of issue areas varied by year, with 76 from 1998 to 2001 (4 years), 77 from 2002 to 2006 (5 years), and 78 from 2007 to 2008 (2 years), so in theory the lowest possible value is (4(1/76)+5(1/77)+2(1/78))/11 = 0.01302.

are the edges that connect them. Figure 1 visualizes precisely the expected structure of the lobbying network, first for 1998 and then for 2008.⁸

[Insert Figure 1 about here]

We followed a simple procedure to construct the one-mode issue area affiliation networks from the full LDA dataset shown in Figure 1.⁹ For presentation purposes, node size reflects degree centrality, or the number of lobbyists active in the issue area who are also active in issue areas linked to it. The shade of the node corresponds to normalized eigenvector centrality, or geodesic distance, with darker shades reflecting a higher centrality within the network. A notable visual feature of these graphs is the density of connections between issues. The average density is 0.957, meaning less than 5 percent of the theoretically possible issue area connections fail to make an actual connection. In other words, all but four or five issue areas are tied to each other at any given time. Clearly, these issue area affiliation networks exist as single groups, as predicted.

The extremely dense network graph shown in Figure 1 suggests a core-periphery structure is evident, yet to more systematically identify this structural feature we need to account for the nearly two-fold increase in number of LDA reports filed in 2008 to those filed in 1998. In effect, we need to control for an inflation effect of LDA reports over time. Affiliation networks can be proportionally reduced by simply eliminating ties between nodes—in our case numbers of lobbyists connecting issue areas—below some reasonable threshold (Granovetter 1978). In other words, we can eliminate ties between issue areas that have very few lobbyists active in both, but keep ties between issue areas with many lobbyists active in both, and lose

⁸ Network visualizations for each annual period appear similar so we do not produce all of them here. Due to the extreme density of the networks, connections between issue areas with fewer than 100 lobbyists linking them together are omitted for presentation.

⁹ See Appendix B for more detailed methodological procedures used in this paper, along with additional network centrality metrics that do not directly address the core-periphery derivation.

very little information. To do this, we first calculate an *LDA report multiplier* as the frequency of LDA reports filed in a given year divided by the frequency of LDA reports in 1998, and follow a simple procedure to adjust each annual network.¹⁰ The result is that we can generate reduced networks for each year as if they were equivalent to the amount of overall lobbying activity in 1998. The results produce much clearer network visualizations in Figure 2. Corresponding network metrics are included in Appendix B for reference.

[Insert Figure 2 about here]

Now we can unmistakably see that a handful of issue areas—such as BUD—form a tightly knit center, while a large number of issue areas are located on the fringes, only moderately connected to the rest of the system.

But our intent here was not to arbitrarily describe reduced networks, but to identify issue areas in the core and the periphery. Now that we have equivalent networks, we use a one-mode categorical core-periphery block model algorithm to identify core issue areas (Borgatti and Everett 1999). This technique partitions lobbyist (actors) who are active in the most active issue areas (events), and the issue areas that are most frequently mentioned by the most active lobbyists from those lobbyists and issue areas who are less active.

As our theory predicts, very few issue areas are detected in the core, $mean_{core} = 8.09$ (SD = 1.64). On average, about 10.5 percent of the issue areas in any network are located in the core. Only four issue areas—BUD, HCR, TAX, and TRD, are located in the core in all eleven years. Of course, the common thread among these domains is that they are primarily under the jurisdiction of Congress's "money" committees, the tax-writing and appropriations panels in both chambers. Given the annual budget process in Congress, it should be no surprise that these

¹⁰ Appendix B reports these multipliers and provides further detail regarding the reduction procedure.

areas garner most of the lobbying attention, or that these are the domains with the greatest number of links to other substantive policy domains.

Figure 3 shows the results of our efforts to detect a consistent core over time. For each year, it identifies those policy domains that fall into the core.

[Insert Figure 3 about here]

All 13 domains that appear in the core at least once are included, and darker shadings indicate those policy domains with the highest levels of coreness. While we use a dichotomous measure of core/periphery to distinguish lobbyist and representation activities, its analog coreness is a continuous measure generated by the core / periphery algorithm that we draw on for illustrative purposes only. Thus, our identification of the core is relatively generous, assuming that a core issue area is one that experienced enough activity to be in the core at least once in the eleven year time period. Even with this rather liberal interpretation of what issues are in the core, our primary expectation holds: most issues never appear in the core; a few almost always are there.

Lobbyists and Interest Representation in the Core and the Periphery

Now that we have uncovered the latent structure of the lobbyist affiliation network, we test our hypotheses about types of lobbyists and their representational activities. For each of the 78 issue areas, we generate a dummy *core-periphery* variable where core = 1 for each unique issue area identified in the core in any year (n = 13), and 0 for issue areas always identified in the periphery (n = 65).

Additionally, as a validation check on our empirically derived core issue areas, we develop an alternative theoretical identification for issue areas. That is, based solely on LDA issue area descriptions, we classify issue areas based on its *government function*, where primary = 1 (n = 14) for each issue area that applies to those functions where the federal government is

chiefly or exclusively responsible. To be clear, these issue area identifications are intended to serve as an alternative straw man theory of what is central and peripheral to government. Primary government functions include federal taxes (TAX, TRD), establishing the federal budget (BUD), providing national defense (DEF), overseeing homeland security (HOM, LAW, IMM), conducting foreign or Native American affairs (FOR, IND), or making macroeconomic policy (ECN). Issue areas coded secondary = 0 (n = 64) are those that regulate specific industries or products (AGR, BAN, FOO), address particular social problems or specific government programs (MMM, CSP, WEL), or deal with highly specialized areas of civil litigation (BNK, CIV, CPT). Using this coding scheme, we identify a roughly equivalent number of primary issue areas as we detected in the core of the network. Note that five of these hand-coded issue areas were also detected in the core (TAX, BUD, TRD, GOV, and DEF).

By doing this we adopt the naïve assumption that lobbyists may perceive some LDA issue areas as topically broad enough to attract many lobbyists, and some as substantively narrow as to only attract those with a peculiar regulatory or legal specialty. The budget and appropriations (BUD) process applies to all sectors of the economy; finance (FIN) issues apply primarily to Wall Street and its regulation. Of course, the definition of issues themselves that would fit them into these categories is subject to the political process (Baumgartner and Jones 1993). We do not suggest that these kind of ex ante classification schemes are ideal, only that it is reasonable to assume that lobbyists perceive some issue areas as broad and some as narrow. Rather than our systematic core-periphery detection, we ask do the poorly defined LDA issue areas—not the core and periphery—actually trigger what appears to be bandwagons and niches?

For H_1 and H_2 , we report results from difference in means tests in Table 2 for both the theoretically deduced government function and network analysis detected core-periphery issue areas.

[Insert Table 2 about here]

When issue areas are classified based on their government functions, we fail to reject the null hypothesis for three of our four descriptive variables. On the contrary, our hypothetical expectations match issue areas much better when categorized by the network's structure. We can reject the null hypothesis for all four of the LDA issue area-level variables when comparing core and periphery domains.

*In-House/Contract Lobbyists (H*_{1a}). Lobbyists who work directly for their clients are more likely to be active in the core, whereas those hired as consultants are disproportionately active in periphery domains. The proportion of in-house lobbyists is a statistically significant 8% greater in the core, but merely 3.5% higher in primary issue areas than secondary ones. This finding is consistent with the logic of niche partitioning, where organized interests strategically outsource lobbying to comparatively low-overhead hired guns for issues on the periphery. In turn, they can allocate internal government relations staff to issues in the more salient, competitive domains that demand greater attention. This relatively simple marginal cost-benefit calculation applies when we empirically detect the core and periphery in the lobbyist affiliation network, but not when we distinguish issue areas by government function alone.

*Revolving Door Lobbyists (H*_{1b}). Likewise, core domains are home to about 15% more covered official lobbyists than their conventional counterparts. Primary government-function issue areas have, on average, 8% more covered officials as well. Though nominally greater, this difference in means is not statistically significant. These results suggest that interest

organizations active in core domains strategically seek the competitive advantage of those who have key connections inside government. In the relatively crowded, highly competitive domains that attract the majority of attention, interest groups exploit revolving door lobbyists' personal and professional connections to former employers.

Not only do different types of lobbyists occupy the core and the periphery, but those lobbyists engage in measurably different representation activities in each.

Client Diversity (H_{2a}). As measured by our entropy score, we can reject the null hypothesis that lobbyists' clientele diversity is greater on average in both primary function domains and in core domains. The differences in means results do not appear to show much of a difference for either the theoretical or the empirical categorization. Yet, entropy is difficult to interpret because the formula allows for variations in both the count of clients and the number of industries they represent. Primary government function domains have an average score of 0.77, which is about 15% greater than secondary issue areas; similarly, core domains have a mean 0.79 entropy score, or 18% higher than those on the fringes. Because these calculations are based on CRP's 121 industries, a 15% mean-difference amounts to roughly 18.1 more industries represented than in secondary issue areas, if we assume equal levels of overall lobbying activity (which entropy treats as a variable, not a constant). Likewise, an 18% mean-difference translates to about 21.7 additional industries, on average, represented in the core than in the periphery. As expected, lobbyists jumping on the core domain bandwagons will necessarily have a greater diversity of clients than their niche-partitioned counterparts on the fringes.

Policy Generalization (H_{2b}**).** Finally, lobbyists active in core domains are simultaneously active in more domains overall. The same is not true for primary and secondary government function issue areas. The issue niche politics that we expect in peripheral issue areas

are home to more specialized lobbyists. LDA issue areas in the core consist of generalists who are simultaneously lobbying on nearly two-thirds (64%) more issue areas than the relatively specialized lobbyists representing clients in the periphery. Taken together, lobbyists in core issue areas were simultaneously active in an average of 1.6 additional issue areas per year, were lobbyists engaged in the periphery were active in fewer than on issue additional area annually (0.98). The relative specialization we see in the periphery is precisely the kind of policy differentiation we would expect to observe in niche issues.

All told, this series of difference in means comparisons for types of lobbyists and lobbying activities provide substantial evidence that the different kinds of interest group politics occur simultaneously, depending on where we look. If instead we categorize issue areas by what appears to functional differences, we fail to see a difference, save one measure of interest representation. We conclude that those issue areas identified by the core-periphery detection routine are not simply artifacts, and that our technique provides an empirical solution to a significant theoretical debate in the interest group literature.

Implications for Lobbying and Interest Representation

Using the tools of social network analysis with data from the full census of lobbying activities in Washington for more than a decade, we have looked at some old issues of interest group politics through an innovative analytical lens. Perhaps the greatest value in these tools is that they allow us to look comprehensively at the global structure of the Washington influence community rather than at only a small part of it, as has been more common in previous studies. In perhaps the seminal study of the structure of interest group politics, Heinz et al (1993) found policy domains consisting only of hollow cores, not tightly-knit inner circles. Our results suggest that the picture they paint is not so much wrong as it is incomplete.

Instead, when we look at the full census of lobbyists, we find two very different worlds of influence peddling in Washington. For while many have noted the privileged access and extraordinary power of individual lobbyists working within obscure policy subsystems, others have pointed to huge lobbying campaigns where thousands of rank-and-file lobbyists interact with the nation's political leadership in high-profile and well publicized debates. We simply offer an empirical means to identify where to expect these very different political contexts. The first world, where most lobbying attention is directed, is one in which we see a great deal of interconnectedness and interest diversity. The second world, home to an overwhelming majority of policy domains, cultivates niche lobbying and policy balkanization.

That these two worlds exist simultaneously is precisely what has made it difficult for political scientists to generalize about "typical" or "average" lobbying. We believe this is why the literature on lobbying has often been so internally contradictory. No wonder political scientists draw such different conclusions about interest group politics when they study such disparate events.

The normative implications are clear. Highly specialized lobbyists drift toward to those sparsely populated domains in the periphery where they can focus on obscure policy minutiae, relatively free from public scrutiny. These fringe domains and the niche lobbying they invite yields a system that "does not promote open and freewheeling discussion of all relevant policy ideas and alternatives," but that instead generates fragmented and inconsistent policy outputs (Browne 1990, 504). Hired gun lobbyists exploit these conditions to generate profit in pursuit of public policy. In 2012, the top twenty lobbying firms alone reported taking in more than \$350 million in lobbying receipts,¹¹ a portion of what they are required by law to report.

¹¹ Data obtained from http://www.opensecrets.org/lobby/top.php?showYear=2012&indexType=l on March 18, 2013.

Alternatively, the network core appears to match images of interest group pluralism at their most optimistic, since domains in the core are home to the greatest diversity of interests. Yet such a conclusion would be misleading, as a select few revolving door lobbyists take advantage of their connections to former employers. The dominant Washington lobbying firms and organizations with sophisticated internal government relations operations are able to pay a premium to retain those lobbyists with the access and inside information that only high level "public service" can bring. So it should be no surprise that corporations who invest heavily in revolving door lobbyists in core domains like taxes reap the rewards (see Richter, Samphantharak, and Timmons 2009). It is hard to see these findings without wondering whether this service is in fact public-spirited, or simply a prerequisite for a lucrative career in the service of a private interest. The lobbying disclosure and revolving door regulations already in place certainly have done little to dampen the enthusiasm of Washington's most powerful from staffing up with large numbers of former government officials. Indeed, it appears to be one of the most effective ways to find a seat at the center of the conversation.

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Tables

	Mean	SD
<i>Types of Lobbyists</i> (n = 35,992 lobbyists)		
% In-house Lobbyists	38.7	13.1
% Covered Officials	9.8	2.1
<i>Representation Activities</i> (n = 78 LDA issue areas)		
Interest Diversity	0.69	0.11
Policy Generalization	0.16	0.06

Table 1. Lobbyists and Their Activities, 1998-2008

Source: Compiled by the authors from Center for Responsive Politics (CRP) lobbying database. *Note*: Data for types of lobbyists are dummy variables and data for lobbying activities are averages across all years from 1998 through 2008 for each issue area. The full data set may be found in the supplemental materials.

Table 2. Interest Representation in Washington's Core and Periphery

	Government Function					Network Structure		
	Primary	Secondary	d.f.	t	Core	Periphery	d.f.	t
In-House Lobbyists	63.08	60.96	76	0.55	65.53	60.50	57.5 [†]	2.24*
	(10.93)	(13.54)			(5.11)	(14.01)		
Covered Officials	10.41	9.65	76	1.20	10.98	9.55	31.3 [†]	3.18*
	(1.94)	(2.18)			(1.28)	(2.21)		
Interest Diversity	0.77	0.67	76	3.26*	0.79	0.67	76	4.21*
	(0.11)	(0.10)			(0.08)	(0.10)		
Policy Generalization	0.20	0.15	14.2^{\dagger}	1.88	0.23	0.14	76	5.96*
	(0.09)	(0.04)			(0.06)	(0.04)		
Issue Areas	14	64			13	65		

Note: N = 78 LDA issue areas. Primary and secondary government functions were manually coded based on issue area descriptions. Core and periphery issue areas were empirically detected from the lobbyists' affiliations.

[†] Welch's estimated degrees of freedom for unequal variance used to calculate *t*.

* Statistically significant difference in means at the 95% level.

Figures









Note: Nodes are the issue areas defined by LDA forms and edges are individual lobbyists that are active in corresponding domains. Connections between issue areas with fewer than 100 lobbyists linking them together are omitted for presentation. Graphs for other years appear similar so are not included here.



Figure 2. Reduced Issue Area Affiliation Network A. 1998 (Issue Area Nodes = 76)



Note: Nodes are the issue areas defined by LDA forms and edges are individual lobbyists that are active in corresponding domains above the cutpoint threshold. Graphs for other years appear similar so are not included here. The procedure utilized to generate these reduced networks is described in Appendix B.



Figure 3. Issue Areas Detected in Core, 1998-2008.

Note: Any shading indicates presence in the core for each year. For presentation purposes, darker shading indicates higher values of "coreness" above the minimum threshold for inclusion in the core. See Appendix B for methods used to calculate coreness.

Appendix A: LDA Reports by Issue Area

Issue Area	Code	Number of Report-Mentions
Accounting	ACC	3,979
Advertising	ADV	3,606
Aerospace	AER	9,724
Agriculture	AGR	30,882
Alcohol & Drug Abuse	ALC	4,890
Animals	ANI	4,154
Apparel, Clothing, & Textiles	APP	1,738
Arts & Entertainment	ART	5,279
Automotive Industry	AUT	6,206
Aviation, Airlines & Airports	AVI	25,944
Banking	BAN	25,639
Bankruptcy	BNK	13,158
Beverage Industry	BEV	2,253
Chemical Industry	CHM	6,378
Civil Rights & Civil Liberties	CIV	10,157
Clean Air & Water	CAW	26,035
Commodities	CDT	1,418
Computers & Information Tech	CPI	15,718
Constitution	CON	2,916
Consumer Product Safety	CSP	21,007
Copyright, Patent & Trademark	CPT	29,616
Defense	DEF	82,785
Disaster & Emergency Planning	DIS	9,677
District of Columbia	DOC	2,595
Economics & Econ Development	ECN	15,158
Education	EDU	47,323
Energy & Nuclear Power	ENG	58,787
Environment & Superfund	ENV	59,921
Family, Abortion & Adoption	FAM	5,839
Fed Budget & Appropriations	BUD	170,333
Finance	FIN	33,626
Firearms, Guns & Ammunition	FIR	2,455
Food Industry	FOO	15,169
Foreign Relations	FOR	20,472
Fuel, Gas & Oil	FUE	12,567
Gaming, Gambling & Casinos	GAM	9,487
Government Issues	GOV	39,814
Hazardous & Solid Waste	WAS	9,374

Table A1. Total Number of LDA Report-Mentions, 1998 and 2008

Health Issues	HCR		98,121
Homeland Security	HOM	1	21,064
Housing	HOU	[22,660
Immigration	IMM		22,352
Indian/Native American Affairs	IND		19,476
Insurance	INS		20,707
Intelligence	INT		332
Labor, Antitrust & Workplace	LBR		37,769
Law Enforcement & Crime	LAW	7	22,263
Manufacturing	MAN	1	6,985
Marine, Boats & Fisheries	MAR		17,452
Media Information & Publishing	MIA		2,495
Medical Research & Clin Labs	MED)	15,716
Medicare & Medicaid	MMN	N	52,867
Mining, Money & Gold Standard	MON	1	2,525
Natural Resources	NAT		27,975
Pharmacy	PHA		12,478
Postal	POS		8,399
Radio & TV Broadcasting	COM	[19,882
Railroads	RRR		9,274
Real Estate & Land Use	RES		13,472
Religion	REL		1,270
Retirement	RET		21,660
Roads & Highways	ROD		9,209
Science & Technology	SCI		23,426
Small Business	SMB		11,214
Sports & Athletics	SPO		2,706
Taxes	TAX		124,155
Telecommunications	TEC		39,978
Tobacco	TOB		8,148
Torts	TOR		13,884
Trade	TRD		69,099
Transportation	TRA		65,917
Travel & Tourism	TOU		3,339
Trucking & Shipping	TRU		4,501
Unemployment	UNM	1	1,476
Urban Development	URB		7,265
Utilities	UTI		14,285
Veterans Affairs	VET		7,127
Welfare	WEL	/	7,347

Appendix B: Lobbyist Affiliation Network Methods and Metrics

This appendix supplements the network methodological discussion in the manuscript to explain in greater detail how the annual lobbying affiliation networks were constructed and reduced to control for lobbying activity inflation to derive comparable core-periphery structures over time.

Issue Area Affiliation Networks

Generating the one-mode issue area affiliation networks involved a series of simple procedures outlined below. For each year, the full LDA dataset was contracted into a standard 'edge-list' text file where observations included all unique lobbyist-issue area pairs and corresponding frequencies of occurrence in the dataset. These edge-lists were imported into Pajek using the txt2pajek utility and the networks transformed from massive two-mode networks (where all lobbyists and all issue areas are nodes), to the one-mode issue area affiliation networks pictured above. Core / Periphery analysis was completed using the corresponding function in UCINET, and results compiled as a standalone dataset of issue areas and their corresponding core or periphery membership. Table A1 reports the frequency of LDA reports and number of issue area nodes for each annual network. In addition, a series of standard network analysis descriptive statistics (including density, normalized eigenvector centrality, average degree, and average weighted degree, generated through corresponding functions in UCINET) are also reported. All network graphs were created using Visone visualization software.

Year	Freq. LDA	Issue Area	Density	Normalized	Avg.	Avg.
	Reports	Nodes		Eigenvector	Degree	Weighted
				Centrality		Degree
1998	18,211	76	0.925	12.00	69.4	7,060.2
1999	20,033	76	0.954	12.24	71.6	9,543.6
2000	20,591	76	0.966	12.46	72.5	10,964.6
2001	22,096	76	0.946	12.03	70.9	7,791.0
2002	24,360	77	0.970	12.51	73.7	10,076.7
2003	27,423	77	0.956	12.14	72.7	7,917.7
2004	29,133	77	0.966	12.29	73.4	9,138.8
2005	32,032	77	0.956	12.08	72.7	10,234.7
2006	32,658	77	0.964	12.08	73.3	11,255.5
2007	34,142	78	0.962	11.87	74.1	12,597.8
2008	32,953	78	0.958	11.98	73.8	11,543.8

Table A1. Full Issue Area Affiliation Network Metrics

Reduction Procedure and Reduced Issue Area Affiliation Networks

Table A2 reports the values we utilize to reduce the lobbying affiliations to adjust for over time increases in lobbying activity, as well as network metrics of these reduced networks for each year. The reduction procedure is as follows. First we calculate an *LDA report multiplier* as the frequency of LDA reports filed in a given year divided by the frequency of LDA reports in 1998. Second, we calculate the *average maximum number of edges* as the mean number of ties that a given issue area has to its most frequently-connected issue area pair. That is, for each year, each issue area has a maximum, mean, and minimum number of connections to all other issue areas. Consider this hypothetical example: Accounting (ACC) may have a maximum 100 lobbyist-ties to Taxes (TAX), but a minimum of zero ties to Immigration (IMM), whereas Federal Budget & Appropriations (BUD) may have a maximum 2,500 ties to Taxes (TAX) and a minimum of 25 to Unemployment (UNM). Because minimum (and mean) values may be zero-inflated, we chose to use the maximum number of connections in order to reduce

the networks for comparison. For each network-year, we then calculated the mean of this value across issue areas.

Next, we simply multiplied the average maximum number of edges by the initial report multiplier. The resulting *edge cutpoint* is the threshold number of edges for each issue area below which edges were deleted to reduce the network. So, for the 1999 network, we eliminated ties between issue areas that had fewer than $(20,033_{1999 LDA Reports}/18,211_{1998 LDA Reports})*(574_{avg.}_{number of maximum edges}) = 631 edges. So, for any issue area pair that had less than 631 lobbyists active in both in 1999, we eliminated those ties.$

This process was repeated for each year, with annual cut-points listed in Table A2. The result is a series of eleven annual networks that are proportional to the overall amount of lobbying activity. Table A2 also reports the average degree, average weighted degree, and the number of nodes empirically derived to be included in the core, for each reduced network.

	Network Re	duction Formu	ıla Values	Reduced Network Metrics		
Year	LDA Report	Avg. Max	Edge Cut-	Avg.	Avg. Weighted	Core
	Multiplier	# Edges	point	Degree	Degree	Nodes
1998	1.00	436	436	2.7	1,881.4	9
1999	1.10	574	631	1.9	1,875.7	7
2000	1.13	609	689	2.3	2,282.3	9
2001	1.21	477	578	1.8	1,575.8	10
2002	1.34	533	713	1.6	1,573.3	10
2003	1.51	486	732	1.0	1,052.6	7
2004	1.60	537	859	1.0	1,088.6	7
2005	1.76	603	1,061	0.8	1,103.1	10
2006	1.79	648	1,162	0.7	1,075.2	7
2007	1.88	699	1,310	0.7	1,177.9	5
2008	1.81	631	1,143	0.8	1,248.3	8

Table A2. Reducing the Lobbying Affiliation Network