Conflict, Information and Lobbying Coalitions[1]

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This paper explains lobbying organizations' choice to join alliances on policy matters with respect to 1) the degree of the organization's access to external information sources, and 2) the amount of internal organizational conflict and deliberation. An informational view of lobbying suggests that the more informed an organizational actor is, the more likely it will gain access to governmental decision makers; and greater access to the government will decrease the utility of joining a cooperative lobbying effort. In addition, internal conflict in the definition of a policy position will limit an organization's ability to take any position on a policy issue, while successful internal deliberation will augment a lobbying organization's ability to find cooperation partners. Outcome and explanatory data are taken from an existing dataset housed at ICPSR. Nested logit maximum likelihood estimates for the trichotomous cooperation model are presented and interpreted. Support is lent to both the internal conflict and the informational theories of cooperation in policy lobbying. In particular, the model results suggest that organizations predisposed to internal conflict find *both* non-policy lobbying *and* cooperative lobbying appealing, suggesting that these organizations only sometimes successfully deliberate over policy. And consistent with the information view of lobbying, greater access to information sharply decreases the utility of lobbying cooperatively.

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Introduction

In lobbying the government over the content of public policy, there are few individual- or organization-level incentives for lobbyists to free ride on the efforts of other lobbying organizations. This is because each national lobbying organization tends to have a unique profile of policy interests, and the actual framing of public policy will distribute costs and benefits among groups depending on this unique profile of interests (Stone 1989, Heclo 1978). Lobbyists will prefer to work with other lobbying organizations if the joint effort will minimize their expected policy losses. Cooperation entails compromise, however, and a lobbying organization will prefer to lobby alone over the content of policy if it has sufficient access to shape policy making on its own. This paper offers two complementary theories to explain the variance in organizations' actual choices to lobby cooperatively or alone; some disincentives to cooperate are organizational and some are informational.

Disincentives to cooperate with other lobbying organizations over policy content often will result from internal organizational conflict. The basic assumption is that interest groups are themselves coalitions of organizational subgroups which do not necessarily have homogenous preference orderings across policy issues. James March notes that "most systems studied in the social sciences are apparently conflict systems of conflict systems" (March 1962:664); James Q. Wilson writes, "an organization is itself a coalition, the members of which are likely to see the costs and benefits of an even larger coalition very differently" (Wilson 1995:271). Organizational leaders must tend to an intra-organizational "deliberation" problem, prior to approaching other organizations regarding a joint lobbying effort. This organizational perspective of lobbying organizations informs the conflict and deliberation theory, outlined below.

Further, particularly influential lobbying organizations, or organizations with sufficient access to the government, may not feel the need to solicit cooperation partners. An interest group with access to needed information may have sufficient credibility and influence to shape policy directly, without compromising its most preferred position as part of a larger lobbying effort. It has long been established that being informed is a critical component of having credibility and hence influence in the state's policy decision-making (studies range from Bauer, Pool and Dexter 1971, Milbrath 1963, to Austen-Smith 1992, Austen-Smith and Wright 1992 and 1994, Rasmussen 1993 and

Hansen 1991). Mark Hansen, for instance, writes, "representatives mitigate their uncertainty about the preferences of constituents… by consulting with interest groups…" (1991:17). A group's degree of access to information, then, should be related to its desire to lobby jointly or alone.

This paper develops these complementary theories, and tests their implications against an existing dataset.[2] The next section describes the dependent construct for this study, which (by construction of the survey) has three mutually exclusive and exhaustive alternatives: 1) to lobby alone over policy 2) to lobby jointly over policy and 3) to lobby for non-policy (or log-rolling) reasons. The remaining sections develop the informational and conflict theories and hypotheses; the nested logit model and results; and interpretation, discussion and conclusion.

Dependent Construct: Nested Alternatives for Policy Lobbying

Lobbying as a part of a coalition may help an organization overcome the limits of its time and resources to achieve a policy decision that is agreeable to all members of the coalition. Gamson writes that members of a coalition "may realize their mutual goal antagonisms but such decisions lie in the future and the present alliance may make [each] better able to achieve a wide range of goals not all of which will be incompatible" (1969:374). In a coalition, organizations can "pool their contacts, channels of access, sources of information… as well as the talents and expertise of their personnel…" (Moe 1980:62, see e.g. Birnbaum 1992:143). Several organizations then can gain lobbying efficiencies through a division of the policy lobbying labor.

When lobbying over the content or substance of policy, members of a coalition must negotiate a common policy position to unite behind; "organizations involved in coalitions work hard to iron out any differences they might have so as to present Congress with a unified front…" (Schlozman and Tierney 1986:306). While negotiation or "interest group deliberation" often can have socially-desirable effects (Mansbridge 1992, or Madison 1961:325), often an interest group will prefer to lobby to have policy tailored to its particular profile of policy interests, and this generally would require lobbying alone. Whether a lobbying organization chooses to lobby jointly with other organizations, then, will depend not only on whether it is able to, but also whether it needs to.

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[2] The data come from Laumann and Knoke (1987), and are housed at ICPSR.

In the Laumann and Knoke survey, each health and energy lobbying organization, for a wide range of policy lobbying "events,"[3] was asked first whether it was 1) involved in the development of substantive policy, and if so, the respondent was to indicate whether the organization 2a) formulated the policy or 2b) worked jointly with other organizations on the policy.[4] This design nests the choice to lobby jointly or alone within the larger question of whether the organization was policy-oriented or not for the issue at hand (see diagram below). The choice probabilities {p,q} are taken to be a function of some unobserved utility comparison between the three alternatives.

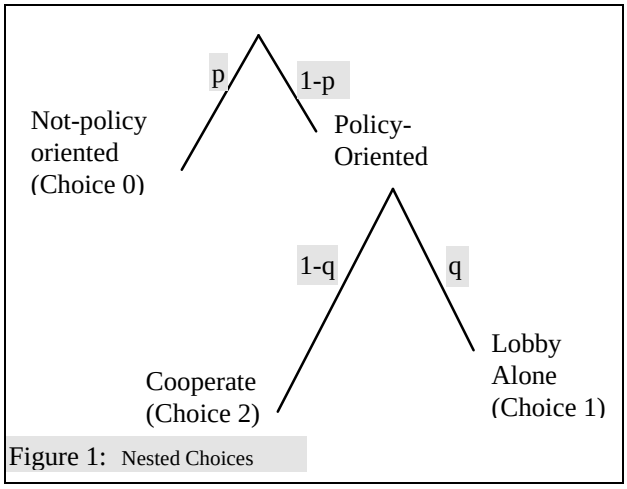

Figure 1: Nested Choices

Modeling cooperative policy lobbying as a nested decision, rather than throwing away all of the non-policy-oriented observations, is useful for several reasons. Under sufficient internal conflict, one might expect an organization to avoid an explicit policy stance and so the dichotomous choice to lobby jointly or alone is not exhaustive of the alternatives available. Further, the nesting assumptions allow tests of the inter-relationships between the policy-oriented behaviors, and modeling this relationship requires modeling the data on non-policy choices (see the nested logit model below).

[3] In the data collection, an event is defined as any discrete government decision, such as a committee reporting a bill or an agency considering a final rule.

[4] The event data is very complicated and I model only a subset of it. In particular, organizations are given the opportunity to select out of the dependent measure I use if they either were "inactive," or if they could not come to an agreement on a common position. This latter response obviously selects in a manner correlated with my dependent variable, but so few organizations choose it (about 12/1000 observations) that I ignore the observations that selected out. These observations will be useful for confirming the model by "predicting" their behavior, since they should have a very low estimated probability of cooperation. Also, policy-oriented organizations are given the option to say they adopted another organization's policy position, but I recode this option to indicate they were not involved in policy development (recoded to 0).

Theories and Hypotheses

This section outlines in an informal manner the two complementary explanatory theories of organizational cooperation. One can think of the information theory as accounting for the "external" side of the organization's choice problem, and the conflict theory as accounting for the "internal" side of the organization's choice problem. It is in this sense that the theories are complementary.

Information, Access, and the Need to Cooperate

On theoretical grounds, it is not obvious how an organization's degree of access to politically-relevant information will affect its propensity to cooperate on policy matters. On the one hand, having greater access to information sources may help an organization find cooperation partners with common interests in the policy, and hence increase its propensity to cooperate (Boje and Whetten 1981, Moe 1980:62, Knoke and Rogers 1979:34). Boje and Whetten, for instance, write that having more communication ties to other organizations may enhance an organization's "potential for establishing coalitions to enhance their political influence" (1981:381). In this sense, having greater access to information decreases an organization's transaction costs for finding others to cooperate with.

On the other hand, having greater access to information gives the organization greater access to and influence in the government, and hence will diminish an organization's need to cooperate (Milbrath 1963, Hansen 1991). It has long been established in the lobbying literature that having access to information leads to influence. Bauer, Pool and Dexter, for instance, found that since trade associations are "nodes in the communications process," "what they knew or failed to learn, what they heard or did not hear, what they said or failed to say, had a profound effect on what other people learned, heard, or said" (Bauer et al. 1971:325). A lobbying organization in general will compromise its direct interests in making a cooperative effort only if it needs to, and an organization with greater access to the government is less likely to need to make a joint lobbying effort to have its position taken into account in the policy making process.

Evaluating the strength of each of these two contradictory expectations is an empirical matter. Since each expectation points

in an opposite direction, each information hypothesis serves as a critical test of these two expectations. The following table reports variables that test the information theory, and gives expected effects on the probabilities of cooperating and lobbying on non-policy matters from an informational perspective. The measures of access to information sources are: number of full-time-equivalent employees devoted to collecting technical data, number of strong and weak communication ties to other lobbying organizations, and the number of times the organization testified during the period of the survey.

Table 2: Information Theory Variables and Expected Effects

Variable	*Scale*	*P(Cooperate)*	*P(Non-Policy)*
Technical Staff	[0.2, 26]	R	Decrease
Strong Ties	[0, 81]	Decrease	R
Weak Ties	[6, 107]	Decrease	R
Times Testified	[0, 31]	Decrease	Decrease

R=Restricted from choice utility equation

Intra-organizational Conflict and the Ability to Cooperate

One of the key contributions from organization theory to the study of lobbying is its emphasis on opening the "black box" of complex national lobbying organizations and to take into account the effect of internal politics on observable organizational behavior. Internal deliberation on policy matters can have a profound effect on an organization's ability to act. In particular, when intra-organizational politics generates a broad-based agreement on the organization's issue position, this agreement will be relatively easy to "sell" to other organizations. When intra-organizational politics forces the organization to take a relatively narrow stand on its policy position, then the organization will have a difficult time finding others who will be willing to work with the organization. In the extreme, intra-organizational conflict can prevent an organization from taking a stand on any policy position. Wilson writes, for example, that on internally divisive issues, the organization's staff will take "a position stated in such general terms as to be meaningless" (Wilson 1995:226). Laumann and Knoke (1987:209) report that "the American Petroleum Institute, the AMA, and many others are unable to take stands on some issues because of internal divisions of interest -- for example, the oil import quota or abortion on demand" (see also Bauer, Pool and Dexter 1972:333).

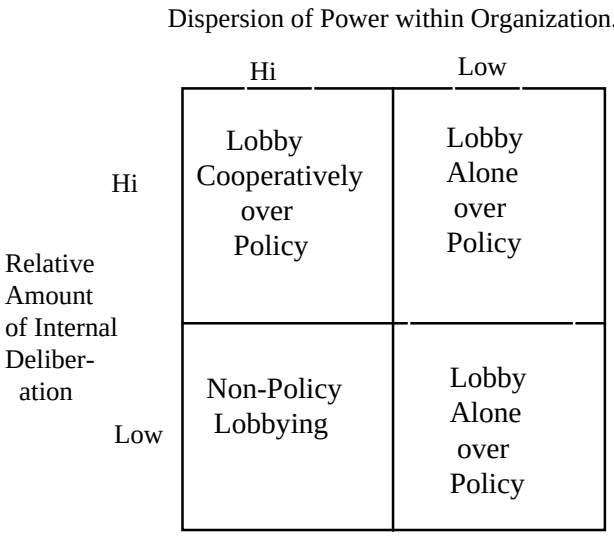

Figure 2: Internal Organizational Deliberation Theory

Policy preference orderings will not necessarily be consistent across the constituent subgroups within an organization, and this creates the potential for internal conflict. "Conflict… arises when the most preferred states of all elementary subunits cannot be simultaneously realized" (March 1962:663). This conflict will only be consequential for observable organizational behavior, though, if power within the organization is dispersed or decentralized. If power within the organization is decentralized, then the organization's leaders must tend to an internal coalition-building problem prior to initiating a joint lobbying effort with other organizations.

Figure 1 diagrams the theoretical relationship between organizational centralization and deliberation, and observable lobbying behavior. Internal deliberation is only consequential in the case of decentralized or dispersed power, similar in logic to Madison's extended "sphere." Successful deliberation in the case of decentralization will tend to produce policy positions that have general appeal, and this will make it easier for an organization to find common ground with other organizations. Unsuccessful deliberation in the case of decentralized power, however, means that the organization will experience conflict if the organization takes any position on the policy; in this situation the organization is likely to avoid questions of policy substance altogether. In the case of centralized power, deliberation will be relatively muted and will tend to produce narrow policy positions that will not have general appeal. A centralized organization, however, will never have to shy away from taking an explicit policy position and so will always want to be involved in the development of policy substance.

The Laumann and Knoke survey does not have any direct measures of how much conflict each policy issue caused as it arose; organizational conflict is not observable at the issue level. Further, the survey has no direct measures of the general degree of normal amount of organizational conflict independent of issues. The depiction of an organization as a coalition of subgroups suggests ways to connect organizational deliberation to measures in the dataset, and these then can be related to the organization's propensity to cooperate. I have constructed two simple measures of organizational structure likely to make the organization itself relatively conflictual. The simplest measure constructs a dummy variable that equals one if the organization is either a firm or a single-issue interest group, since both of these in general are more unified than trade or professional associations.[5] Another measure tabulates the levels of the organization's hierarchy (e.g. membership, staff, C.E.O., board, etc.) that is reported to have a "very great deal of influence" or a "great deal of influence" in policy matters. The more layers that have influence, the more likely there will be internal conflict.

Once internal deliberation processes are incorporated into the empirical model, an organization's interest in the policy should be related to cooperation and policy-lobbying in a straight-forward way. When an organization is highly interested in an issue it will tend to be less willing to compromise its position in a joint effort, and so it will find it more difficult to find cooperation partners. The level of an organization's desire to take a substantive policy stand should be monotonically increasing in the organization's interest in the issue.

The following table lists the measured variables and reports expectations about the direction of effects on the probability to cooperate and the probability to lobby on non-policy matters.

Table 1: Conflict Theory Variables and Expected Effects

Variable	*Scale*	*P(Cooperate)*	*P(Non-Policy)*
Unitary	0 or 1	Increase	R
Power Dispersion	[0,6]	Decrease	Increase
Interest	[0,5]	Increase	Decrease
Interest^2	[0,25]	Decrease	Decrease

R=Restricted from the choice utility equation

[5] "Unified" actors in this sense make up about 30% of my sample.

The following table lists some control variables. These are amount of "mobilizable" material resources the organization reports having available, and the total number of groups interested in the issue (which may affect the utility of working with other organizations in several ways – no predictions).

Table 3: Control Variables

Variable	*Scale*
Material Resources	[1,5] (1 means more than 2…)
Number of other Orgs. Interested	[14, 77]

Nested Logit Empirical Model and Results.

A lobbying organization faces a choice between 1) lobbying alone over policy matters, 2) lobbying with other organizations over policy matters, or 0) lobbying for non-policy, or "log-rolling," reasons (so m=3 discrete unordered choice alternatives).[6] Assume that the (unobserved) utility to each organization for each choice is continuous and is a linear combination of the theoretically-specified effect variables and a stochastic component. This assumption is often called the "random utility rationale" for an unordered model; the stochastic term can be considered residual ex ante uncertainty about which choice is best in a given situation. I will give a specific distribution to the utility stochastic terms below. We do not observe the underlying realized utility to organizations for each alternative, but only the discrete alternative each organization chooses.[7] Of course, assume that organizations choose the

[6] These are coded 1,2 and 0, respectively. I constructed a sample of the full health event data by selecting each observation with probability 1/3. After excluding government organizations (which lobby but are not typical "interest groups") and invalid responses, there were 354 observations. I will construct several additional samples from both health and energy to observe the model's performance across samples for the next draft. Creating samples will now be very easy since I now have Lisp code to do it for me.

[7] Ordinarily in unordered choice models, utility is thought of as a function of the attributes of the choices. In my model, utility is a function of the attributes of the organization, so organizations are "impelled" rather than "induced" to choose one alternative over another.

(probabilistically) most preferred alternative. Finally, assume that the utility of alternatives for different organizations is unrelated.[8]

The choice alternatives in this model, however, have a natural grouping.[9] That is, one might expect that the stochastic components of the two policy-related choices are not independently distributed, since it is reasonable to assume that the utilities of policy-lobbying choices are correlated (e.g. the random components of the utility to lobby alone and to lobby with organizations might both be relatively high, but organizations can only choose one alternative). It is further reasonable to assume that the utility to lobby for policy reasons (however the lobbying behavior is manifested) is unrelated to the utility to lobby for non-policy reasons. Another way to express this is that each choice alternative is not necessarily independent of other or "irrelevant" alternatives (the IIA hypothesis).

In this case, it is appropriate to model the inter-relationship between the two policy-related utilities directly, deriving a likelihood function with the assumption that the joint distribution of the two policy-related error terms is not necessarily equal to the product of the two marginal distributions. In the trichotomous nested model it is standard to assume (due to McFadden) that the joint distribution of the grouped error terms is Gumbel's Type B bivariate extreme-value distribution (see Amemiya 1986:300),[10]

$$F(\varepsilon_1,\varepsilon_2) = \exp\{-[\exp(-\rho^{-1}\varepsilon_1) + \exp(-\rho^{-1}\varepsilon_2)]^{\rho}\}$$
$$0 < \rho \leq 1$$

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[8] Clearly, I invoke this assumption to make the likelihood function tractable. Given that a single organization can contribute more than one observation in my dataset, and given that organizations' utility over these different choices must be related (due, e.g. to mobilization effects), I need to find a way to capture the correlation as under-dispersion in the random component. This is an exercise in pure political methodology and must wait until I have more time.

[9] Selection bias is another potential modeling problem with this data. Clearly, those organizations that are lobbying over non-policy matters are also working jointly and alone, and this choice is not measured. My theoretical focus in this paper, though, is on when organizations find it useful to work jointly on substantive policy, and so I take the unobserved non-policy lobbying choices to be distinct from the policy-lobbying choices. This means that collapsing them into a single non-policy category should not introduce bias in my estimates.

[10] McFadden suggests this distribution simply because it is "a convenient way to take account of a correlation between ε_1 and ε_2" (Amemiya 1986:300).

which includes an auxiliary parameter ρ that captures the correlation between the two utilities. Assume that the error term for the choice to lobby for non-policy reasons is distributed as a univariate extreme value distribution

$$F(\varepsilon_0) = \exp[-\exp(-\varepsilon_0)]$$

The benefit of these distributional assumptions is that nested logit can model the inter-relationship between choices directly; $1-\rho^2$ has a substantive interpretation as the correlation between the two grouped choice alternatives.[11] When ρ=1 the joint distribution $F(\varepsilon_1,\varepsilon_2)$ is simply the product of two marginal distributions; estimates of ρ near 1 indicate independence of alternatives, and so this version of nested logit permits a statistical test of the IIA hypothesis directly.

Amemiya derives probability equations for each choice in the trichotomous nested logit model (see 1985:301-302) based on these distributional assumptions. Coding the choice to lobby in a log-roll (non-policy-oriented) manner as "0," to lobby over policy alone as "1" and to lobby over policy cooperatively as "2," the probability of non-policy (log-roll) lobbying for an organization is

$$P(y=0) = P[U(\log\text{–}roll) > U(Policy, Alone) \cap U(\log\text{–}roll) > U(Policy, Cooperate)]$$

The RHS gives the region of the joint density where the utility of lobbying in non-policy (log-roll) fashion is expected to be higher than either of the policy-oriented choices. After integrating and rearranging, Amemiya shows

$$P(y=0) = \frac{\exp(\mu_0)}{\exp(\mu_0) + [\exp(\rho^{-1}\mu_1) + \exp(\rho^{-1}\mu_2)]^{\rho}}$$

[11] Hausman has derived a test statistic for comparing parameter estimates from a full multinomial logit model with those from a simplified model (dropping one choice in the simplified likelihood function) as a test of the violation of IIA, but this approach does not help us understand the relationship between the non-irrelevant alternatives. Gary King reminds us, one does not want to use statistical procedures that "sacrifice information about some of the most interesting political science processes giving rise to one's data;" one should not treat an unusual feature of the data-generating process as a nuisance, but instead one should model the process "directly and attempt to extract information from it" (King 1991:71).

Since I assume that the stochastic utility components for the two policy-oriented choices are both independent of the utility of non-policy lobbying, it follows (consistent with Amemiya)[12]

$$P(y=2|y\neq 0) = P[U(Policy, Cooperate) > U(Policy, Alone)]$$

With this assumption in hand, Amemiya shows (again, after integrating over these bounds and re-arranging)

$$P(y=2|y\neq 0) = \frac{\exp(\rho^{-1}\mu_2)}{\exp(\rho^{-1}\mu_1)+\exp(\rho^{-1}\mu_2)}$$

The full probability that y=2 is this term multiplied by the probability that the organization is going to be involved in lobbying over policy substance, and this probability is taken from the previous branch of the model. Since the utilities of the policy choices are assumed to be independent of the non-policy choice, nested logit permits two natural choice probability comparisons: we can interpret both 1) the probability of choosing to lobby alone *or* with other organizations and 2) the choice to log-roll *or* to lobby on policy substance, as separate *dichotomous* choices. The probabilities for both the choice to lobby alone, and to be policy-oriented, can be retrieved from these two probability statements, since the total probability at each choice node must sum to one.

L_i is the likelihood function, where for identification I set the systematic component of the choice to lobby alone equal to zero.[13] Coefficient estimates for the free parameters are those values where L_i reaches a global maximum. The statistical theory underlying this procedure (maximum likelihood estimation or ML) is to choose values for the free parameters that maximize the probability of observing the sample.[14] Since the log is a monotonic

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[12] Amemiya is somewhat misleading in saying that $p(y=2|y\neq0) = p(U_2>U_1)$, since this lhs does not take into account the probability that the organization chose {1 2} over {0}. By definition of independence, the joint probability that y=2 is the product of the marginal probability for each level of nesting.

[13] All unordered models have m-1 unique equations (where m is the number of alternatives) but m unknowns. To ensure that the probabilities of all three choices sum to one, one category is chosen arbitrarily as a baseline to get unique estimates of the effect parameters for the remaining systematic components of the likelihood function. Note that exp(0)=1.

[14] Notice that each probability statement in L is either "on" or "off" depending on the value of y_i; maximizing L maximizes the probability that each observation yields its realized value, for all observations in the dataset.

transformation, the parameters that maximize the $\log L_i$ will also maximize L_i. I use the $\log L_i$ since taking logs makes it easier to find partial derivatives for the maximization algorithm.

$$LogL_i = \begin{cases} \mu_{0i} - \log D_{1i} \\ (\rho - 1)\log D_{2i} - \log D_{1i} \\ \rho^{-1}\mu_{2i} + (\rho - 1)\log D_{2i} - \log D_{1i} \end{cases}$$

where L_i is the top, middle, bottom line if y_i is 0, 1, or 2, respectively; the probability of observing the sample is proportional to the sum of the $\log L_i$; and

$$\mu_{0i} = \beta_0 + \beta_1 X_1 + ... + \beta_{12} X_{12},$$
$$\mu_{1i} \equiv 1$$
$$\mu_{2i} = \alpha_0 + \alpha_1 X_1 + ... + \alpha_{12} X_{12}$$

$$D_{1i} = \exp(\mu_{0i}) + D_{2i}^{\rho}$$
$$D_{2i} = 1 + \exp(\rho^{-1}\mu_{2i})$$

The alphas, betas and rho are free parameters to be set to maximize the function logL, given Y and X. Under reasonable regularity conditions (see King 1991:75) ML estimates of these parameters are consistent, asymptotically normally distributed, and asymptotically efficient. Model results are given in Table 1.

Table 1: Nested Logit Coefficients and Standard Errors

Variable	*Equation*	*Coefficient*	*S-E*	*t-Ratio*
Power Dispersion	μ_0	0.2596	0.1404	1.8484
FTE Tech Staff	μ_0	-0.0589	0.2152	-0.2738
Interest	μ_0	-0.1363	0.5216	-0.2612
Interest^2	μ_0	-0.3459	0.5209	-0.6640
Resources	μ_0	-0.1734	0.1546	-1.1207
Time Testified	μ_0	-0.6081	0.2222	-2.7366
Power Dispersion	μ_2	0.1811	0.1426	1.2698
Interest	μ_2	0.1711	0.5437	0.3146
Interest^2	μ_2	-0.3954	0.5386	-0.7342
Resources	μ_2	-0.0103	0.1694	-0.0608
Times Testified	μ_2	-0.0819	0.1776	-0.4615
Mobilized Groups	μ_2	0.1039	0.1308	0.7944
Strong C. Ties	μ_2	-0.4050	0.1892	-2.1410
Weak C. Ties	μ_2	-0.1229	0.2114	-.5814
Unitary Actor	μ_2	0.3477	0.1347	2.5800
Constant	μ_0	-0.7054	0.1417	-4.9763
Constant	μ_2	-0.6513	0.1390	-4.6867
ρ		0.9862	Not Estimated, see Figure 6	

Hypothesis tests of ML estimates are relatively straight-forward. The general issue is how much information one loses by reporting point estimates rather than the full likelihood function. The information matrix of the likelihood function evaluated at its maximum is a measure of the relative curvature of the likelihood function around the maximum, and this curvature represents the precision of the coefficient estimates or the amount of information contained in the likelihood function at this point (see King 1991:87-89). The greater the curvature of the likelihood at its maximum, the more confidence one can invest in the maximum parameter estimates relative to other hypothetical values. [15]

[15] King (1991:89) notes that the information matrix is an estimator of the coeficient to the second-order term of a quadratic approximation to the log-likelihood function; showing how the information matrix is related to the approximate curvature of the L gives a nice intuitive explanation of the

The diagonal elements of the inverse of the information matrix give the variances of the corresponding parameter estimates, and so the square roots of the diagonal elements estimate parameter standard errors. The familiar Wald (or "t-test") statistic is distributed standard Normal, and the square of the Wald statistic is distributed chi-square with one degree of freedom. Notice that in this specification few of the coefficients reach standard significance thresholds (t-statistic near 2). The information theory is lent support from a significant coefficient on strong communication ties, and the internal conflict theory is lent support from the precision around the coefficient on the unitary actor variable and the power dispersion variable.

Even though few of the coefficients test individually significant, the coefficients jointly boost the probability of observing this sample considerably. The log of the ratio of the likelihood value of a restricted (or null) model to the full model (multiplied by -2) is distributed chi-square with degrees of freedom equal to the number of restricted parameters. The log-likelihood ratio is a test to see if the ratio is unusually small, or that the full set of parameters increases the likelihood value for a given set of data statistically significantly. The value of the likelihood function for the full model at its maximum is -346.306, and for the null model is -373.22. The probability that the full model value would differ this much from the null model value is substantially less than 0.0001.

Interpretation of Parameter Estimates and Discussion.

Interpretation of the parameter estimates in an unordered model is not straight-forward. This is true because the three choice probabilities are constrained to sum to one, and changes in an explanatory variable can affect all choice probabilities simultaneously. Thus, an increase in an explanatory variable that has a positive sign in one probability statement, will not necessarily increase the probability of that choice, but instead depends on where the other probabilities are also moving (Aldrich and Nelson ____:46 gives a numeric example). "That the signs of the coefficients… are not sufficient to determine the direction of change of the corresponding probabilities, necessitates increased care in interpretation of the results of polytomous logit models"

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information contained in the likelihood function (his explanation is better than mine).

(Aldrich and Nelson ____:46). Usually researchers will report tables of "odds ratios" comparing the relative choice probability for one alternative over another. I instead will simply graph all three probabilities over a range of variables related to my theoretical foci to see how the predicted probabilities behave over the range.

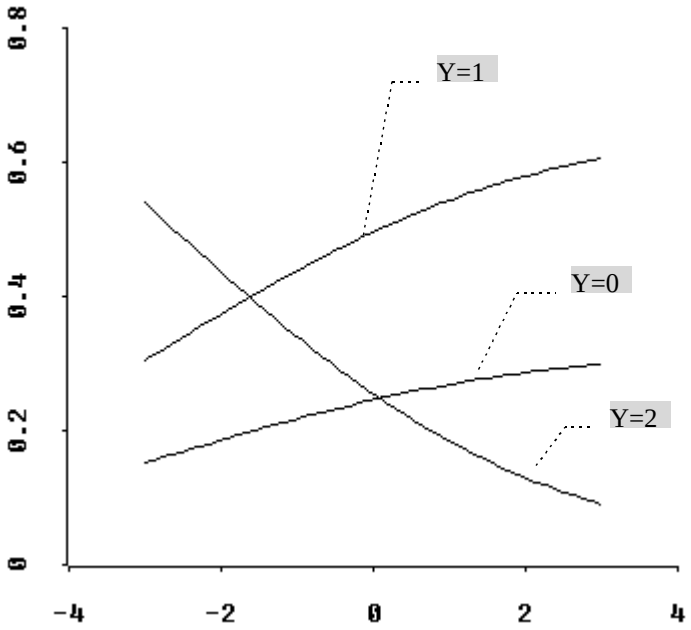

Figure 3: Probabilities over Domain of Strong-tie Measure of Access to Information

Figure 3 shows the predicted choice probabilities as the inter-group communication measure of access to information ranges from low to high. Notice that organizations' tend to be less inclined to lobby jointly and more inclined to lobby alone over policy substance as their access to information increases. This result is consistent with the informational view of access and lobbying, which states that more informed actors will have sufficient access to convey a policy position without the help of others. That is, more informed lobbyists can avoid the compromise entailed in a joint effort because they can convey their specific interest effectively on their own. The fact that organizations become slightly more inclined to lobby in non-policy matters as their access to information increases suggests that there may simultaneously be some mobilization effects from inter-group communication.

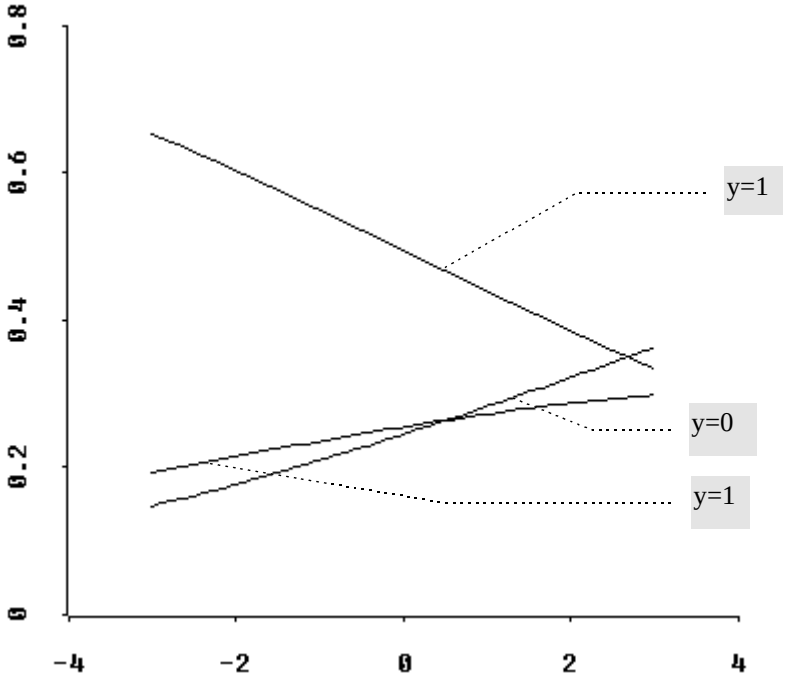

Figure 4: Probabilities over domain of the Organizational Hierarchy Index

Figure 4 shows the predicted choice probabilities as the measure of internal power dispersion ranges from low to high. Increasing decentralization of power increases the utility of *both* cooperating on policy matters and of lobbying for non-policy reasons, but decreases the utility of lobbying alone. This is consistent with the organizational conflict and deliberation theory, which states that highly decentralized organizations will either deliberate an acceptable internal position or it will experience conflict. The former case will tend to produce policy positions that are generally appealing (using standard notions of deliberation), and this will make it easier for the organization to find common ground with other organizations. In the latter case, where the organization fails to come to terms on policy substance, the organization is likely to avoid an explicit policy stance altogether.

The other measure of potential internal conflict, while statistically significant, is somewhat more blunt and does not capture the effect of internal conflict and deliberation in the same manner as the direct measure of power dispersion. As the unitary actor measure changes from 0 (trade or professional organization) to 1 (firm or single-issue group), the probability of choosing to lobby on non-policy matters decreases by -0.047; the probability of lobbying alone over policy substance decreases by -0.098; and the probability of

lobbying cooperatively increases by .145. That is, while firms and single-issue groups are (perhaps) more unified or centralized, they are less likely to lobby alone than professional organizations. This is contrary to the conflict and deliberation theory. The dummy variable used here is a crude measure, though, and captures a wide variety of differences between the two types of organizations including size, influence, etc., and so does not stand alone as a test of the conflict and deliberation theory.

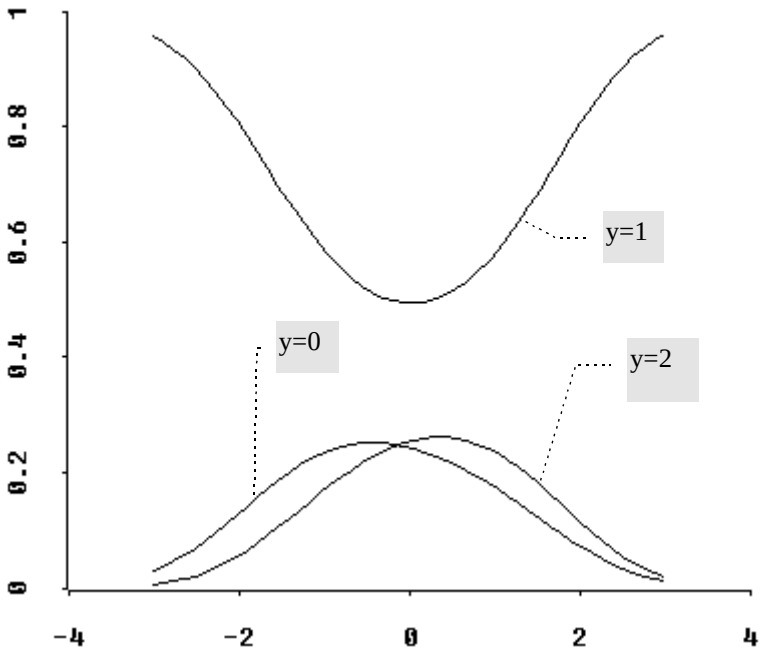

Figure 5: Probabilities over Domain for Level of Interest Measure

Figure 5 shows the estimated choice probabilities when an organization's interest in the issue at stake ranges from low to high. In the model, I entered a second-order interest term to allow the predicted probabilities to be non-monotonic and to capture the effect of very low and very high interest separately. The choice probabilities of both non-policy lobbying and cooperative lobbying are closely matched, similar to the effect of the power dispersion measure. That is, it is only at moderate levels of interest that organizations are likely either cooperate or to avoid a policy stance. It is relatively easy to imagine why organizations with only a moderate interest in the issue will be likely to cooperate: organizations that are highly interested in the issue are very likely to avoid the compromise entailed in a joint effort (and choose to lobby alone over policy with probability approaching 1). The fact that organizations with a moderate interest in the issue are

relatively likely to choose to avoid a policy stance is perhaps only understandable from an organizational conflict perspective.[16] It is perhaps precisely because the organization has an interest in the policy that is has a hard time reaching a policy position acceptable to the organization as a whole.

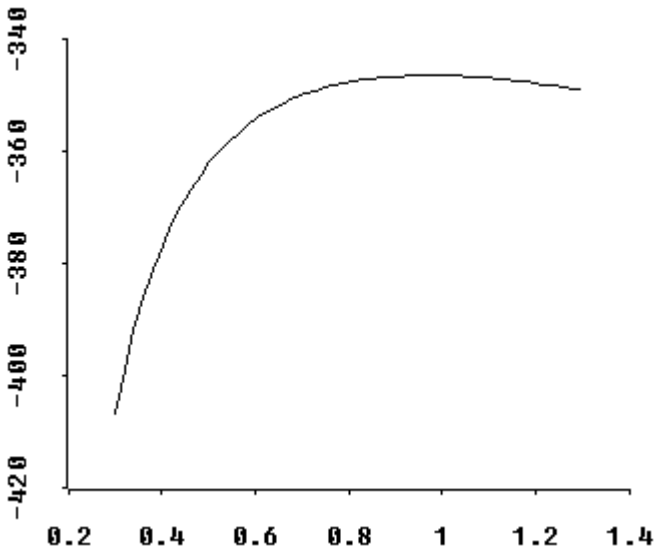

Figure 6: Curvature of LogL around Max(Rho)=0.986

Finally, figure 6 shows the curvature of the likelihood function around the maximum of rho. The interpretation of rho is as a correlation in the stochastic terms for the utility of each choice alternative, with correlation given by $(1-\rho^2)$. Although the likelihood reaches a point maximum with rho=0.986, indicating independence in the three alternatives, the likelihood function is relatively flat above 0.7.[17] This means that it not wise to reject any guess for the policy-choice utility correlation between 0 and 0.5. That is, there may be a systematic relationship between the unobserved stochastic components of the utility terms, but this model and data do not shed much light on this.

[16] Interest in the cooperation equation is like a half-empty glass, and interest in the non-policy equation is like a half-full glass.

[17] I was unable to get the likelihood function to converge with rho free using both analytical and numerical methods to find derivates for the gradient function. I had to maximize the logL "by hand" defining different global values for rho over a wide range until I found a global maximimum of the entire likelihood function. As such, I think there may be something wrong with nested logit, but in any case one can get a feel for the precision of rho's point estimate by looking at the curvature of the logL around rho.

Conclusion

This paper lends support to recent informational theories of lobbying, which emphasize the role of empirical information about the likely effects of policy in the political process. In these theories, because of the uncertainties inherent in implementing policy, information is not purely instrumental but has an independent effect on policy decision making. Those organizations that are likely to have useful information for government decision makers are also the least likely to want to cooperate with other organizations. Given the disincentives to an organization to compromise as a part of a joint lobbying effort, the results suggest that highly informed organizations have less of a need to cooperate perhaps due to easier access.

This paper also suggests that the outcome of internal deliberation inside of national lobbying organizations can yield markedly different observable lobbying behavior. That is, organizations that ex ante are most likely to need to deliberate in order to reach an agreeable policy stance are both likely to cooperate with other organization and to avoid a policy stance altogether. This suggests that these organizations can either 1) successfully deliberate an acceptable position for the organization, and this position is more likely to be appealing to other organizations or 2) unsuccessfully deliberate and, to minimize internal conflict, avoid a policy stance altogether.

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